



# **CLEAR-COM ECLIPSE**

## **I-SERIES INTERCOM PANELS**

### **INSTRUCTION MANUAL**

i-Series Intercom Panels Instruction Manual  
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# IMPORTANT SAFETY INSTRUCTIONS

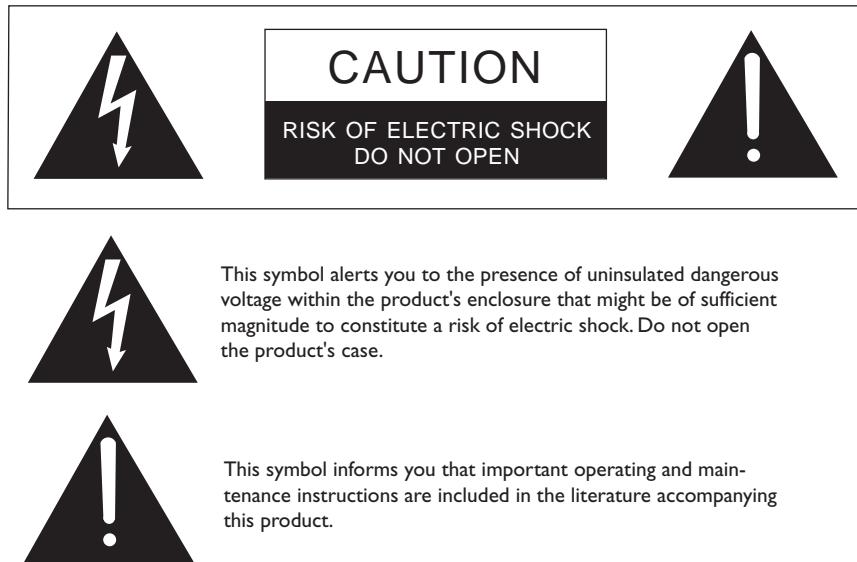
**For your safety, it is important to read and follow these instructions before operating an i-series panel:**

*Please read and follow these instructions before operating an i-Series panel.*

- (1) **WARNING:** To reduce the risk of fire or electric shock, do not expose an i-Series panel to rain or moisture. Do not operate an i-Series panel near water, or place objects containing liquid on it. Do not expose an i-Series panel to splashing or dripping water.
- (2) For proper ventilation, make sure ventilation openings are not blocked. Install the i-Series panel according to the directions in the Installation Chapter of this manual.
- (3) Do not install an i-Series panel near a heat source such as a radiator, heat register, stove, or other apparatus (including amplifiers) that produces heat. Do not place naked flame sources such as candles on or near an i-Series panel.
- (4) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades, with one blade wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- (5) Protect the power plug from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the i-Series panel's chassis.
- (6) Only use attachments/accessories specified by Clear-Com Intercom Systems.
- (7) Unplug the i-Series panel during lightning storms or when unused for long periods of time.
- (8) Refer all servicing to qualified service personnel. Servicing is required when:
  - The i-Series panel has been damaged in any way, such as when a power-supply cord or plug is damaged.
  - Liquid has been spilled or objects have fallen into the i-Series panel's chassis.
  - The i-Series panel has been exposed to rain or moisture.
  - The i-Series panel does not operate normally.
  - The i-Series panel has been dropped.

Please familiarize yourself with the safety symbols in Figure 1. When you see these symbols on an i-Series panel, they warn you of the potential danger of electric shock if the i-Series panel is used

improperly. They also refer you to important operating and maintenance instructions in the manual.



*Figure 1: Safety Symbols*

# OPERATING AN I-SERIES INTERCOM PANEL

*Clear-Com i-series intercom panels are designed with configurable front and back panels.*

The i-series of intercom panels for the Eclipse matrix system represent an innovative concept in intercom panel design. Each panel is constructed from several individual units called modules, which can be added or removed in the field, giving you exceptional flexibility in planning a panel's initial configuration and then easily changing the configuration as future operational needs change.

## FEATURES OF I-SERIES INTERCOM PANELS

The i-series design emphasizes simplicity. No specialized training is required to operate an i-series panel. Intuitive lighting indicates the status of keys for ease of use. Each key may be programmed as either a talk, a listen, or a talk-with-listen.

Features of the i-Series panels include:

- Available in a number of standard configurations with 8, 16 or 32 keys.
- Up to five expansion panels can be connected to an i-Series panel (E-1410E expansion panels) as described in chapter 5 of this manual.
- Full graphic LED-backlit displays for each key on display panels.
- 16-button keypad module for DTMF dialing and panel reprogramming (I-1430E and I-1470E only).
- Individual listen level adjust on every panel.
- Auto-sensing headset and microphone connectors.
- Access to multiple audio sources and multiple speaker and headset inputs and outputs when an auxiliary options module is installed (I-1470E only). The auxiliary options module also provides you with two relays and two GPIs (general-purpose inputs) that can be used either locally or system-wide.
- Advanced menu features allow you to assign new destinations and sources to your panel directly from your panel, to program IFB sources and destinations, to dial telephone interfaces, to transform your panel into an assignment panel, to reset local volume levels, and more.

## I-SERIES CONSTRUCTION

i-Series panels are sturdily constructed from the highest quality components. Each i-Series panel's chassis is constructed of cold-rolled steel. Front-panel modules and removable rack ears are cast from aluminum. All external connectors and switches are made of the highest quality components and are structurally reinforced.

Keys feature long-life LED illumination. Displays are full-graphic LCD with long-life LED backlighting.

i-Series internal architecture is based on the widely used Motorola M-Core processor. All audio is digitized by CODECs and routed to a DSP to be controlled as desired by the user.

All i-series panels have internal power supplies.

## I-SERIES MODULE DESCRIPTIONS

i-Series intercom panels are designed in standardized units called modules. Because the panels are designed this way, you can add or remove components, such as keys, in the field without replacing the entire intercom panel. Repairing panels is easier, faster, and less expensive. The following sections give you an overview of i-series modules.

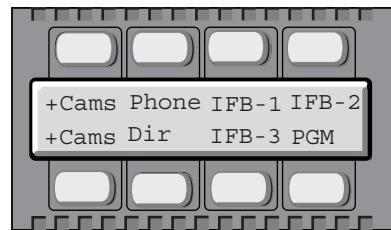
### KEY MODULE

The key module is the basic building block of an i-series intercom panel. A panel can accommodate from one to four key modules which can be added or removed as needed.

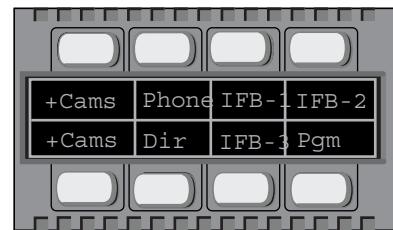
Each key module has eight backlit keys that glow in either green or red to indicate their talk/listen status. Each key has a 5-character alphanumeric display that shows its currently programmed assignment. The alphanumeric name of an assignment is typically called a "label."

Display panels feature backlit LCD displays with labels that are updated as you program them from the Eclipse Configuration System. Non-display panels have slots for paper labels. A display and non-display key module are illustrated in Figure 1-1.

Display Key Module  
with Electronic Labels



Non-Display Key Module  
with Printed Labels



*Figure 1-1: Key Modules*

## FUNCTION KEY MODULE

The function key module contains the intercom panel's basic and advanced controls. There are two types of function key modules in the i-series. The 16-key module has a numeric keypad while the 4-key module does not, as illustrated in Figure 1-2.

The 4-key module contains the keys that control basic intercom functions such as switching between gooseneck/headset speakers and microphones, sending call signals, and adjusting listen levels. It has separate volume controls for intercom and program sources. The operation of this module is discussed later in the chapter.

The 16-key module includes the basic function keys and adds a 12-button numeric keypad for dialing telephone interfaces and for programming advanced features. Advanced features allow you to:

- Temporarily deactivate all latched keys on a panel.
- Override the on/off or volume settings at a destination.
- Assign new sources and destinations to your panel from your panel.
- Program IFB sources and destinations.
- Reset microphone and sidetone volume levels.
- Receive a variety of information about your panel on the panel's LCD displays.

These functions are described in detail later in this chapter.

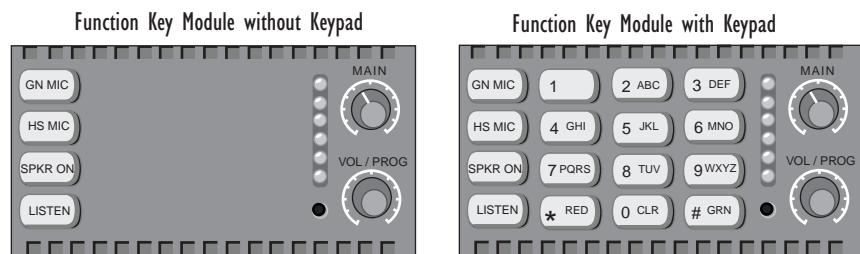


Figure 1-2: Function Key Modules

## MIC-HEADSET MODULE

Every i-series intercom panel has a mic-headset module equipped with an auto-sensing headset and microphone connector and an integrated loudspeaker.

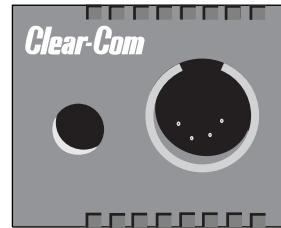
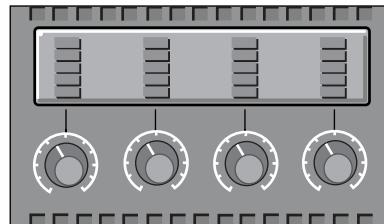


Figure 1-3: Mic-Headset Module

## LEVEL-CONTROL MODULE

The level-control module is used in conjunction with a key module to give you a constant visual read-out of each key's volume level (this option is no longer available for new sales but is supported).



*The auxiliary options module connects your i-Series panel to a variety of audio and control functions.*

Figure 1-4: Level-Control Module

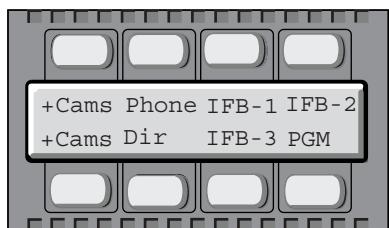
## AUX-101 AUXILIARY OPTIONS MODULE

The auxiliary options module connects your i-Series panel to a variety of audio and control inputs and outputs. It is an optional module that can be installed in the factory or in the field, depending on your needs. Located on the rear-panel of the i-Series panel's chassis, it provides the following functions:

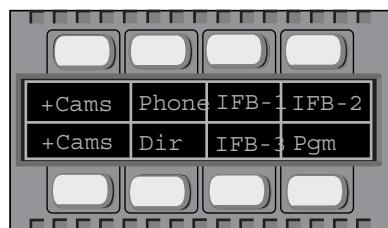
- General purpose inputs
- Relay outputs
- Speaker-feed output
- Line-level output
- Hot-microphone output
- Balanced-program input
- Auxiliary microphone input

The auxiliary option module's functions are described in detail later in this chapter.

## KEY MODULES



Display Key Module



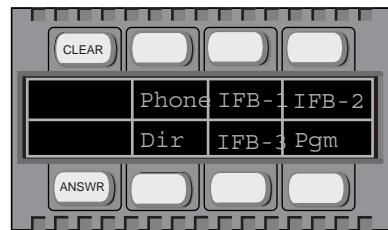
Non-Display Key Module  
(No longer sold)



Blank Key Module



Display Key Module  
with Clear and Answer Keys



Non-Display Key Module  
with Clear and Answer Keys  
(No longer available)

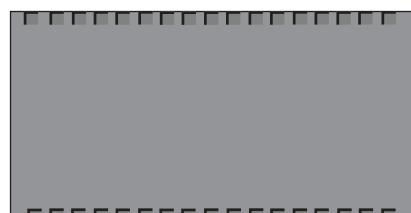
## FUNCTION KEY MODULES



Function Key Module with Keypad

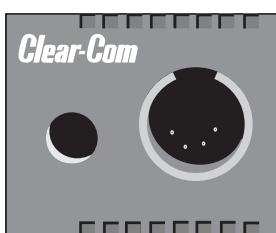


Function Key Module without Keypad

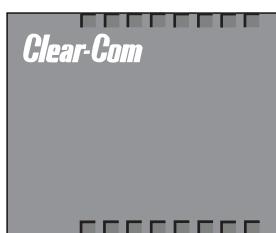


Blank Function Key Module

## MIC-HEADSET MODULES

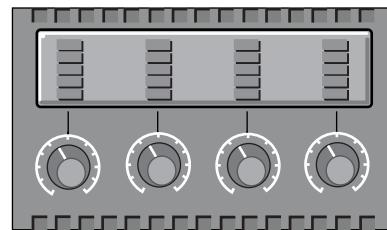


Mic-Headset Module



Blank Mic-Headset Module

## LEVEL-CONTROL MODULE



Level-Control Module  
(No longer available)

*Figure 1-5: The Eleven Front-Panel Modules*

## STANDARD I-SERIES PANEL CONFIGURATIONS

Below are illustrations of the standard i-Series panels.

### i1430E Intercom Panel

4 Display Key Modules  
Function Key Module with Keypad



### i1470E Intercom Panel

4 Display Key Modules  
Function Key Module with Keypad  
AUX-101 module factory fitted



### i1110E Intercom Panel

1 Display Key Module  
Function Key Module without Keypad

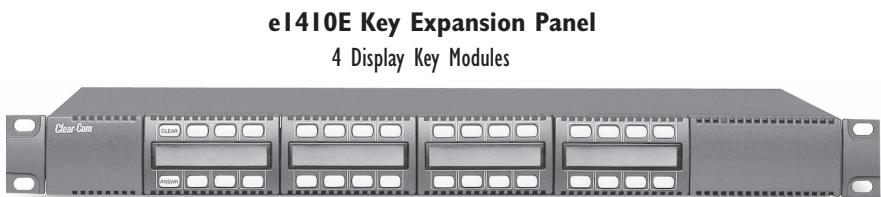
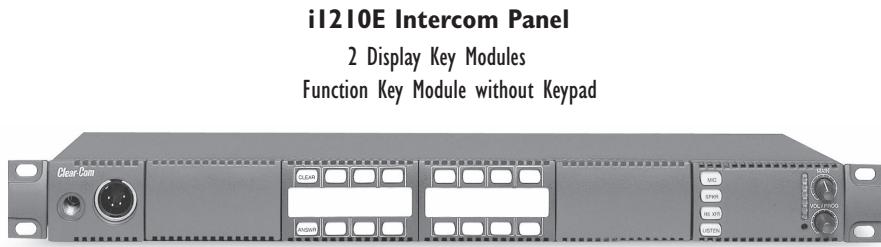


### i1410E Intercom Panel

4 Display Key Modules  
Function Key Module without Keypad



*Figure 1-6: Standard Panels 1*



*Figure 1-7: Standard Panels 2*

The i-1470E panel is the same as the i-1430E panel with the addition of a AUX-101 option card fitted. The other main panels (but not the expansion panels) may also have the AUX-101 option card fitted.

## START-UP SEQUENCES

### NON-DISPLAY KEY MODULE START-UP SEQUENCE

When a panel with non-display key modules is connected to power, all keys on each key module will flash red, then green, and will revert to their programmed colors (red for talk or talk-with-listen; green for listen). If there is no communication to the Eclipse matrix, the keys will flash red once per second until communication to the matrix is established.

### DISPLAY KEY MODULE START-UP SEQUENCE

When a panel with display key modules is connected to power, each of the display modules will show the following message:

Clear-Com  
Vx.x.x@2000

“V.x.x.x” represents the firmware version of the panel. All keys will flash red, then green, and will show their programmed colors and labels if there is communication to the matrix.

If there is no communication to the matrix, the display will show the message “No connection to Eclipse.” The keys will then flash red four times per second until communication to the Eclipse matrix is established.

## FUNCTION KEY MODULE START-UP SEQUENCE

When an intercom panel is connected to power, all of the keys on the function key module will flash red, then green, and will revert to their programmed colors if there is communication to the matrix.

If there is no communication to the matrix, the keys will be dark until communication is established.

## FRONT PANEL CONTROLS AND LIGHTS

### A NOTE ABOUT TERMINOLOGY

In this manual, the term “source” refers to a device—intercom panel, interface, beltpack, or a variety of other devices—that sends audio to your intercom panel. It represents a “listen” path to your panel. The term “destination” refers to a device to which you send audio. It represents a “talk” path from your intercom panel.

The names of these sources and destinations appear in the display of your intercom panel and are called “labels.” A label is a 5-character alphanumeric name that identifies a source, destination, or control function accessed by your intercom panel.

### ABOUT DISPLAYS

The 5-character name, or “label,” that you assign to a key is displayed next to the key on the key module (Figure 1-8). The labels on the upper row refer to their corresponding upper-row keys and the labels on the lower row refer to their corresponding lower-row keys.

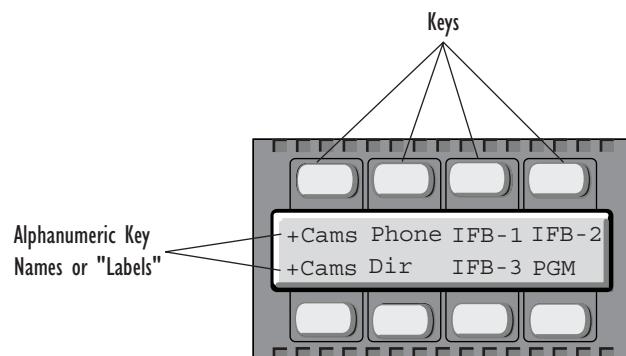


Figure 1-8: Key Module

Display panels have full-graphic LED-backlit displays that you program from the Eclipse Configuration System. Non-display panels have metal grooves into which paper labels can be inserted. Paper labels can be printed from the Eclipse Configuration System.

## ABOUT KEYS

Each key on any key module can be assigned as a talk, a listen, or a talk-with-listen from the Eclipse Configuration System. See the *Eclipse Configuration System Manual* for more information.

### Temporary or Latched Action

When you press a key to talk or listen, the key can be switched on either temporarily or continuously.

When you switch a key on temporarily, it is active for the particular period of time you require. Press and hold the key down for the desired length of time needed to talk or listen, then release the key to return it to its non-active state. You will only be able to talk or listen while you press the key.

Continuous or “latched” action allows you to lock a key into place, so that you can talk or listen hands-free. Quickly tap a key to “latch” or “lock” it into place to talk or listen. The key will glow brightly to indicate that it is active. The key will remain latched until you tap it again to return it to its non-active state.

### Active and Non-Active Keys

When you activate a key—that is, when you press or latch the key to talk or listen—the key becomes bright red or green. When you press or latch an assigned talk key, the key lights up bright red while you talk to the destination. When you press or latch an assigned listen key, the key lights up bright green while you listen to the source.

Otherwise, a key that is not active—that is, a key that is not being used to talk or listen—will be dimmed: dim red for a talk or talk-with-listen key; dim green for a listen key.

Table 1-1 shows the key colors associated with active or non-active talk, listen, or talk-with-listen keys.

*Active keys are bright red or green. Non-active keys are dim red or green. Keys that are not assigned are off, with no illumination.*

KEY	ACTIVE	NON-ACTIVE
TALK	A talk key glows bright red when you press or latch the key to talk.	A talk key glows dim red when it is not active.
LISTEN	A listen key glows bright green when you press or latch the key to listen.	A listen key glows dim green when it is not active.
TALK-WITH-LISTEN  (COMBO)  Setting up a combo key is described in the ECS User Manual under "Panel Programming".	A talk-with-listen key (combo key) glows bright red when you press or latch the key to talk.  When you activate a listen, the talk-with-listen key will glow bright green.	If in talk mode, a talk-with-listen key (combo key) glows dim red when not active.  There is no non-active listen mode. A talk-with-listen key always reverts to non-active talk.

Table 1-1: Key Colors for Active and Non-Active Keys

## ABOUT LIGHTS

A key can be programmed to light up in a variety of ways to indicate its status. These options are discussed in the following sections. If you decide to use one of these options, it must usually first be set up in the Eclipse Configuration System. A table summarizing all of the light options is located at the end of the section.

### Call-Waiting Light

When a source calls an i-Series panel the ANSWR key will flash bright red at the call waiting rate (four times per second) and the source will be displayed in the call waiting stack above the ANSWR key. If any other key on the panel is assigned to the source this key will also flash at the call waiting rate. Audio from the source can be heard at the i-Series panel.

When you press the ANSWR key (or another key assigned to the source and flashing) to talk, the ANSWR key and any other key assigned to the source stops flashing and becomes bright red to indicate that the call is active. When you release the key pressed to take the call it becomes dim red to indicate that it is not active as well as any other key associated with the call.

If a call is being answered when a second source calls you, the ANSWR key will not flash at the call-waiting rate, but will continue to glow solidly bright red to indicate that it is active and the new call will be added to the call waiting stack on the ANSWR key. If there is a key on the i-Series panel assigned to the source of the new call this will

flash bright red at the call rate. Audio from the stacked call will not be heard. Further calls will also be added to the answerback stack until the limit of eight calls is reached.

To answer the second call the first call must be terminated by releasing the key pressed to answer the first call. The first call will then be cleared from the call waiting stack either on the expiry of the Answerback Auto Clear timeout or when you press the CLEAR key. The ANSWR key will then flash at the call waiting rate to signal the next call is waiting.

The Answerback Auto Clear option sets the timeout before the current call is removed from the answer-back stack after the call has been ended. The Answerback Auto Clear timeout option is set up in the Eclipse Configuration System (ECS) and it can be set to a value between one and sixty seconds or set to off. See the *Eclipse Configuration System Manual* for more information.

### In-Use Light

A key will double-flash once per second to indicate that a destination you are trying to call is in use.

The in-use light is a feature that must be set up in the Eclipse Configuration System. For more information, see the *Eclipse Configuration System Manual*.

### Telephone Off-Hook Light

A key will flash red once per second if a telephone interface is assigned to that key, and the telephone interface is off-hook. The central matrix will cause each key assigned to the telephone interface on every panel in the system to flash at the off-hook rate whenever the telephone interface is active (off-hook) at one or more of the panels.

If you press or latch a key that is flashing at the telephone off-hook rate, the key will glow solidly bright red to indicate that the key is active. When you release the key, it will resume flashing at the telephone off-hook rate.

The telephone off-hook light is set up by default in the Eclipse Configuration System. For more information, see the *Eclipse Configuration System Manual*.

### Radio-Receiver Active Light

The light on a key will flash red once per second if a radio receiver is assigned to that key, and the radio receiver is active. The central matrix will cause each key assigned to the radio receiver on every panel in the system to flash at the radio-receiver active rate whenever the radio receiver is active at one or more of the panels.

If you press or latch a key that is flashing at the radio-receiver active rate, the key will glow solidly red to indicate that the key is active.

When you release the key, it will resume flashing at the radio-receiver active rate.

The radio-receiver active light requires that the radio receiver is connected via a FOR-22 interface. The radio receiver active light feature must be enabled in the Eclipse Configuration System under the Advanced Settings and Tallies options for the FOR-22 interface. For more information, see the *Eclipse Configuration System Manual*.

## Panel Connected Light

When the Station Connected Tally option is selected in the Eclipse Configuration System software (under Advanced Settings > Global Settings), whenever a destination panel is connected to the Matrix frame its assigned key on your panel will flash red once per second. This option is primarily used when a destination panel is connected to the Matrix frame via a long-line link that might be active only at certain times.

The Station Connected Tally is a feature that must be set up in the Eclipse Configuration System program. For more information, see the *Eclipse Configuration System Manual*.

## Audio-Presence Light

If you assign a source to your panel as a listen-only key, the key will flash green once per second if there is audio present at the source.

The audio-presence light is a feature that must be set up in the Eclipse Configuration System. For more information, see the *Eclipse Configuration System Manual*.

## Incompatible Firmware Light

If the firmware on your panel is incompatible with the matrix, all lights on the panel will blink dim red once per second, and if displays are present, they will read: "No connection to Eclipse".

## SUMMARY OF KEY MODULE LIGHTS

Table 1-2 summarizes the meaning of key colors and blink rates on a key module.

DISPLAY KEYS	LED COLOR	BLINK RATE
Key programmed as listen-only	dim green	none
Key programmed as talk or talk-with-listen	dim red	none
Listen key active	bright green	none
Talk-with-listen key active	bright red	none
Talk-with-listen key listen-only active	bright green	none
Call Waiting	bright red	4x per second
In Use	dim red	2x per second
Audio Presence	dim green	1x per second <i>(continued)</i>
Panel Connected	dim red	1x per second
Telephone Off-Hook	dim red	1x per second
Radio Receiver Active	dim green	1x per second
Incompatible Firmware	bright red	1x per second

Table 1-2: Key Colors and Blink Rates

## ANSWER-BACK FEATURE

*With the answer-back feature, you can reply to incoming calls from sources not assigned to keys on your panel.*

With the answer-back feature you can reply to incoming calls from sources not assigned to keys on your intercom panel. You can also call out to destinations not assigned to keys on your panel.

If a second unassigned source calls you while you are speaking to the first unassigned source, the second call will be placed in the “answer-back stack,” a group of up to eight waiting calls that are answered in sequence.

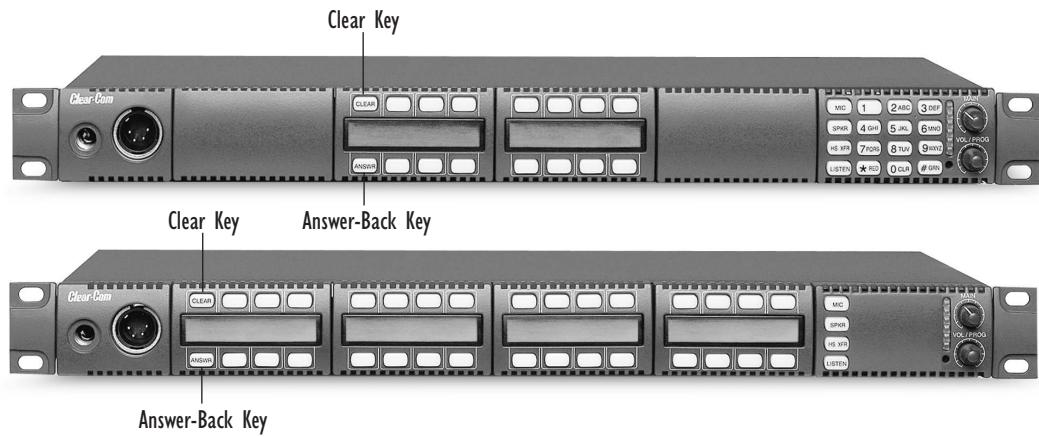
**Note:** *All incoming calls can be answered at the answer-back key—whether from sources with assigned keys on the intercom panel or from sources without assigned keys. Typically, however, only calls from sources without assigned keys are answered there.*

The following sections describe how to use the answer-back feature.

### Answer-Back and Clear Keys

The answer-back key is the leftmost lower key on any intercom panel. The clear key is the leftmost upper key on any intercom panel. (See Figure 1-9). The keys are labeled “ANSWR” and “CLEAR.”

*You cannot latch an outgoing call from the answer-back key. This function is momentary only.*



*Figure 1-9: Answer-Back and Clear Keys*

## **Answering a Call with the Answer-Back Key**

When a source that is not assigned to a key on your panel calls you:

- The calling source's label appears in the display above the ANSWR key.
- The ANSWR key flashes bright red to indicate a waiting call.

These conditions will continue until you press the ANSWR key to talk or until the answer-back time-out period lapses and the call is automatically removed from the answer-back stack.

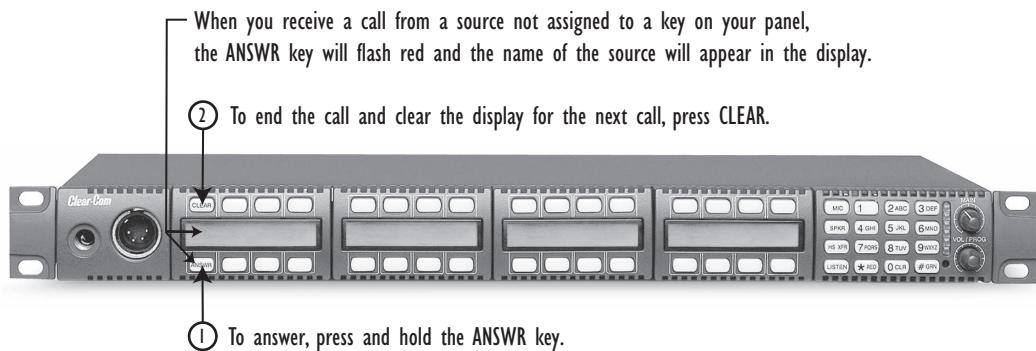
***Note: The answer-back time-out period is set in the Eclipse Configuration System. It can be set to Off or between 10 and 60 seconds. After the time-out period has elapsed, the call will be removed and will no longer be available to answer.***

**To answer a call from an unassigned source at the answer-back key:**

1. Press and hold the ANSWR key to talk to the caller.  
When you press the ANSWR key, it becomes solid red to indicate that it is active. Note that the ANSWR key cannot be latched; it is a momentary function.
2. When you complete the call, release the ANSWR key.  
When you release the key, it becomes dim red to indicate that it is inactive.
3. Press the CLEAR key to remove the caller's label from the display.

***Note: The display clears automatically when the answer-back time-out period elapses after you release the ANSWR key.***

Figure 1-10 illustrates the steps for answering a call from an unassigned source at the answer-back key.



*Figure 1-10: Answering a Call from an Unassigned Source at the Answer-Back Key*

## Answering a Second Call from the Answer-Back Stack

If a second unassigned source calls you while you are talking to the first unassigned source:

- The second caller's audio will come through on your panel's speaker.
- The second call will be placed in the "answer-back stack" (a call list of up to eight possible waiting calls). The second caller's label will appear directly above the current caller's label. The current caller's label appears in the display directly above the ANSWR key.
- The light on the ANSWR key will flash to show that a call is waiting *and* that a call is currently in progress—by flashing at the call-waiting rate to show that a call is waiting; but flashing bright red–dim red instead of the usual bright red–off to show that a call is also currently in progress.

### To answer a call waiting in the answer-back stack:

1. Press and hold the ANSWR key to speak to the caller. The new caller's label will appear in the position directly above the ANSWR key, while the next waiting call (if there is one) will display in the position directly above it. A total of eight calls can wait in the answer-back stack. Only the two most recent caller's labels will appear in the display above the ANSWR key.
2. When you complete the call, release the ANSWR key.
3. Press the CLEAR key to remove the caller's label from the display.
  - The next unassigned caller's label appears in the display above the ANSWR key.
  - The display clears automatically when the answer-back time-out period elapses after you release the ANSWR key.

4. When the next caller's label appears above the ANSWR key, press the ANSWR key to talk to the caller.
5. Repeat steps 2 and 3 until all the calls in the answer-back stack are answered.

## SUMMARY OF ANSWER-BACK AND CLEAR KEY LIGHTS

Table 1-3 summarizes the meanings of the color and blink rates for the answer-back and clear keys.

ANSWER-BACK KEY	KEY COLOR	BLINK RATE
No calls at answer-back	off	none
Call received at answer-back	bright red	4x per second
Answer-back key pressed	dim red	none
Clear key pressed	off	none
CLEAR KEY	KEY COLOR	BLINK RATE
No calls at answer-back	off	none
Answer-back stack not empty	dim green	none
Clear key pressed	bright green	none

Table 1-3: Colors and Blink Rates for Answer-Back and Clear Keys

## VOLUME CONTROLS

The volume program knob is multi-functional. In addition to adjusting the program volume, it adjusts listen levels, scrolls through menu items, and selects menu items. These functions are discussed later in this chapter.

### Speaker and Headset Volume Controls

#### Adjusting Intercom Volume

You adjust the master intercom volume on your panel's speaker and headset with the main volume knob on the function key module, as shown in Figure 1-11. Turn the knob clockwise to increase the volume, counterclockwise to decrease it.

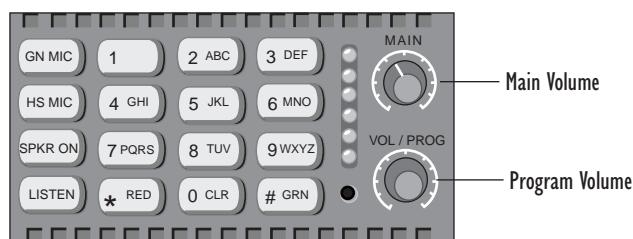


Figure 1-11: Main Volume and Program Volume Controls

## Adjusting Program Input Volume

The VOL/PROG knob operates in two ways. You rotate the knob clockwise or counterclockwise to adjust volume levels or to scroll through menu items. You press the knob in, as if it were a key, to select items in a menu.

You receive program input at your panel through the auxiliary options module, so this module must be present before you can adjust the program input. If you do not have the auxiliary options module installed on your panel, the VOL/PROG knob on the function keypad will not operate.

You adjust the program input volume on your panel's speaker and headset with the program volume knob, labeled "VOL/PROG" on the function key module. Turn the knob clockwise to increase the volume, counterclockwise to decrease it.

The six LEDs located to the left of the program volume knob indicate the program volume level. As the volume goes up or down, the number of LEDs that are illuminated changes. Minimum volume is indicated by one illuminated LED; maximum volume is indicated by six illuminated LEDs.

You control the brightness of the six-segment LED with the Display Brightness settings in the Eclipse Configuration System. Refer to the *Eclipse Configuration System Manual* for more information.

**Note:** You can also use the program volume knob to adjust listen levels, to scroll through menu items, and to select menu items. These functions are discussed later in this chapter.

## Adjusting Listen Levels

When you need to monitor several incoming sources at once, you can vary the volume of the sources by setting "listen levels."

For example, in a control room you may be listening simultaneously to the lighting department, the sound department, and the tape editing department, but because you need to cue the director when the show is ready to go on the air, listening to the tape editing department takes highest priority. You need to adjust the volumes of the monitored sources so that the tape editing department is louder than the others. To do this, you set listen levels.

### To adjust the listen level of an incoming source (Method 1):

1. Press the desired listen key.  
The listen key becomes bright green.
2. Press and release the VOL/PROG knob.  
The listen key becomes dim green and flashes.
3. Press and release the listen key again.  
The listen key becomes bright green.
4. Rotate the VOL/PROG knob either clockwise to increase the source's volume or counterclockwise to decrease the source's volume.
5. When the required volume has been reached, press and release the VOL/PROG knob to accept the setting.

6. Press and release the listen key.

The source's volume is now set at the required level.

**Note:** If you try to push an active listen path higher than the maximum possible volume, you will drive the volume of all other active paths downward, thus putting more emphasis on the desired path.

#### The VOL/PROG knob

operates in two ways. You rotate the knob clockwise or counterclockwise to adjust volume levels or to scroll through menu items. You press the knob in, as if it were a key, to select items in a menu.

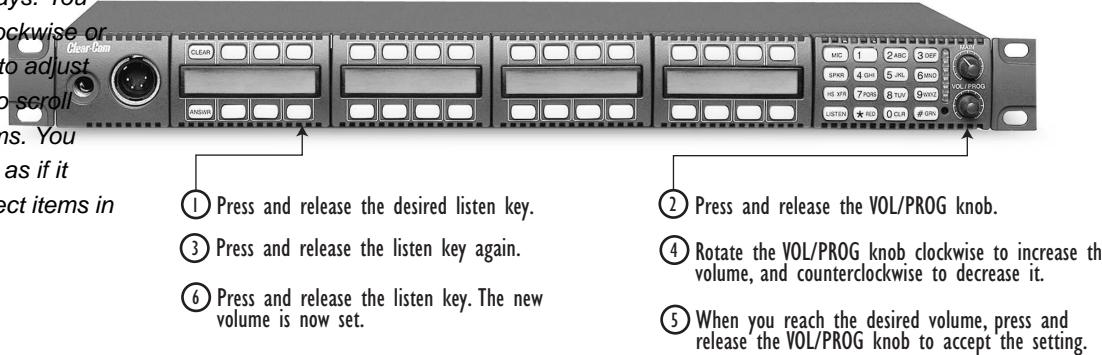


Figure 1-12: Adjusting Listen Levels Method 1

#### To adjust the listen level of an incoming source (Method 2):

The listen level may also be adjusted using the Local Preferences facility (requires a 16-button key module).

*This method works only with a 16-button function key module.*

1. Press the ENTER key (labeled "#GRN") on the numeric keypad to display a list of menu items.  
The first two menu items appear in the panel's leftmost display. (For an illustration of this procedure, see Figure 11.)
2. Scroll to menu item number 7, "Local Preferences," by rotating the VOL/PROG knob.  
You can also scroll through the menu items one at a time by pressing the CLEAR key to scroll up the menu and the ANSWR key to scroll down the menu.
3. Select item 7 by pressing the VOL/PROG knob in, as if it were a key, when item 7 appears in the display.
  - Another menu—a submenu—appears in the display.
  - You can also select item number 7 simply by pressing the 7 key on the numeric keypad.
4. Scroll though the submenu to item number 5, "Listen Level Adjust," and select it by pressing the VOL/PROG knob in, as if it were a key.
  - The words "Listen Level" appear in the panel's leftmost display to indicate that you are in listen-level-adjust mode.

- You can also select submenu item number 5 simply by pressing the 5 key on the numeric keypad.

**Note:** To quickly enter listen-level-adjust mode, simply press three keys in quick succession: the ENTER key (labeled "#GRN"), followed by the 7 key, followed by the 5 key. The words "Listen Level" will appear in the panel's leftmost display to indicate that you have entered the mode for adjusting listen levels. Then proceed forward from step 5 below.

5. Tap any listen key or talk-with-listen key to select it.  
The key will glow bright green to indicate that you have selected it.
  6. Rotate the VOL/PROG knob clockwise to increase the source's volume or counterclockwise to decrease the source's volume.
  7. Continue adjusting listen levels by first tapping a key to select it, and then rotating the VOL/PROG knob to adjust the source's volume.
  8. Press the ESCAPE key (labeled "\*RED") to exit listen-level-adjust mode.
- You can also exit listen-level-adjust mode by not pressing a key on the numeric keypad (0–9, \*, #) for five seconds. After five seconds the mode times out.

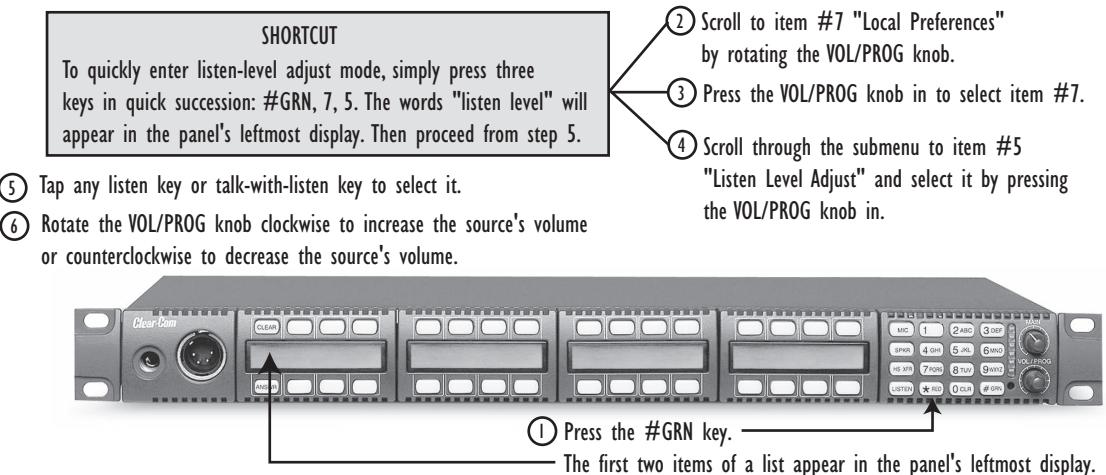


Figure 1-13: Adjusting Listen Levels Method 2

#### To adjust the listen level of an incoming source (Method 3):

1. To adjust a bright-green lighted key's listen level, press 1 on the numeric keypad.
2. Rotate the VOL/PROG knob clockwise to increase the source's volume or counterclockwise to decrease the source's volume.

#### Resetting Listen Levels to the Default Level

You can reset all listen levels to the default, which is the highest possible volume.

### To reset all listen keys back to the default level.

1. Press the 7 key on the numeric keypad to enter Local Preferences mode.

The display on the leftmost key module shows the first two items in a list of local preferences.

2. Scroll through the list by turning the VOL/PROG knob.

You can also scroll through the list one item at a time by pressing the CLEAR key to scroll up the list and the ANSWR key to scroll down the list.

3. When the menu item “Reset Listen Levels” appears in the display, select the item by pressing the VOL/PROG knob in, as if it were a key.

The display will read “Listen Level Reset Sent to Matrix.”

All listen keys are reset to the highest possible volume. When you activate a listen key at your panel, audio will come in at that level. If a caller sends audio to you, that audio will come into your panel at the highest possible volume.

For more information on local preferences, see “Local Preferences” under “Using the Advanced Function Keys” later in this chapter.

**Note:** *The VOL/PROG knob operates in two ways. You rotate the knob to adjust volume levels and to scroll through menu items. You press the knob in, as if it were a key, to select items in a menu.*

### Panel Upgrade Facility (Eclipse V5.1 or later)

If an i-Station firmware upgrade is downloaded to the matrix by ECS with the “Panel Prompt” option set the i-Station user will be asked whether the firmware upgrade should be applied. The i-Station will display the message “UPGRD TO VER nnnnn YES NO” on the display, with each word as a label (nnnnn is the version number). The i-Station keys will flash indicating an upgrade is available. This prompt will be displayed when the upgrade is available if the i-Station is online, or when the i-Station goes online if it is offline when the upgrade is downloaded to the matrix.

The i-Station operator can decline the upgrade by pressing the “NO” key after which the i-Station will return to the normal display. If the upgrade is declined it will not be offered again until a black reset is performed on the matrix.

If the i-Station user presses the “YES” key a confirmation request is display on the i-Station. The confirmation display is “ARE YOU SURE nnnnn YES NO”. If the user selects the “NO” key the upgrade will be cancelled and will not be offered again until a black reset is performed on the matrix.

If the user selects the “YES” key the firmware upgrade will be applied to the i-Station.

# 2

# ACCESSING I-SERIES BASIC FUNCTIONS

*There are four basic function keys.*

The four basic function keys provide convenient one-touch access to such basic intercom functions as turning the microphone on and off. Located on the leftmost side of a function key module, the keys are labeled as follows:

- GN MIC (gooseneck microphone on/off)
- HS MIC (headset microphone on/off)
- SPKR ON (speaker on/off)
- LISTEN (listen-only/call signal/remote telephone release)

Figure 2-1 illustrates the location and purpose of the basic function keys. A more detailed discussion of each key follows.

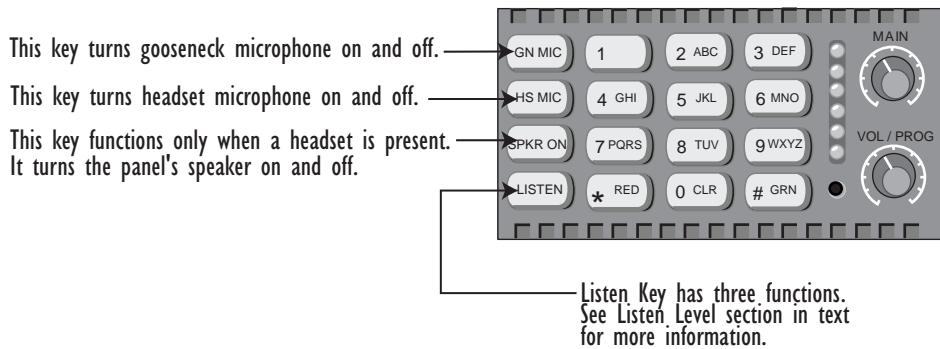


Figure 2-1: Basic Function Keys

## TURNING THE GOOSENECK MICROPHONE ON AND OFF

The gooseneck microphone key, labeled "GN MIC," turns your panel's gooseneck microphone on or off. Press once to turn the microphone on; press again to turn the microphone off.

The gooseneck microphone is your panel's default microphone unless a headset is plugged in. When a headset is plugged in, an auto-sensing circuit in the panel automatically turns the headset microphone on and turns the gooseneck microphone off. The headset microphone always takes precedence over the gooseneck microphone.

If you press a talk key while the gooseneck microphone is plugged in but off, the gooseneck microphone automatically turns on for the

duration of the call. The GN MIC key glows dim green whenever the gooseneck microphone is present but off and bright green whenever the microphone is present and on. If a gooseneck microphone is not present, the GN MIC key will not illuminate. Table 2-1 summarizes the key colors for active and non-active microphone and speaker keys.

## TURNING THE HEADSET MICROPHONE ON AND OFF

The headset microphone key, labeled “HS MIC”, turns your panel’s headset microphone on and off. Press once to turn the microphone on; press again to turn the microphone off.

When a headset is plugged in to the panel, the headset microphone automatically becomes active and the gooseneck microphone is switched off. To switch to the gooseneck microphone, press the gooseneck microphone key, labeled “GN MIC.” When the headset is unplugged, the gooseneck microphone automatically becomes active.

The HS MIC key glows dim green whenever a headset microphone is present but off, and bright green whenever a headset microphone is present and on. When a headset microphone is not present, the key will not illuminate. Table 2-1 on page 7 summarizes the key colors for active and non-active microphone and speaker keys.

## TURNING THE SPEAKER ON AND OFF

The speaker on/off key, labeled “SPKR ON,” functions only when a headset is plugged into the panel. Pressing the speaker on/off key toggles the headset speaker on and off. Press the key once to turn the headset speaker off, and again to turn the headset speaker back on. As the headset speaker turns off, the panel speaker will turn on and vice versa.

The key glows dim green whenever the headset speaker is off, and bright green whenever the headset speaker is on.

**Note:** *Unlike the microphones, both speakers can never be turned off at the same time. The panel loudspeaker is always active unless a headset or alternative speaker source has replaced it. That is why this key is non-functional when a headset is not plugged in.*

## USING THE “LISTEN” KEY TO ACCESS FUNCTIONS

The LISTEN key has three functions:

- Activates the “monitor mode” of a “talk-with-listen” key
- Sends call signals
- Releases remote telephone lines

Figure 2-2 summarizes how to access these functions from the LISTEN key. The sections that follow discuss the functions in detail.

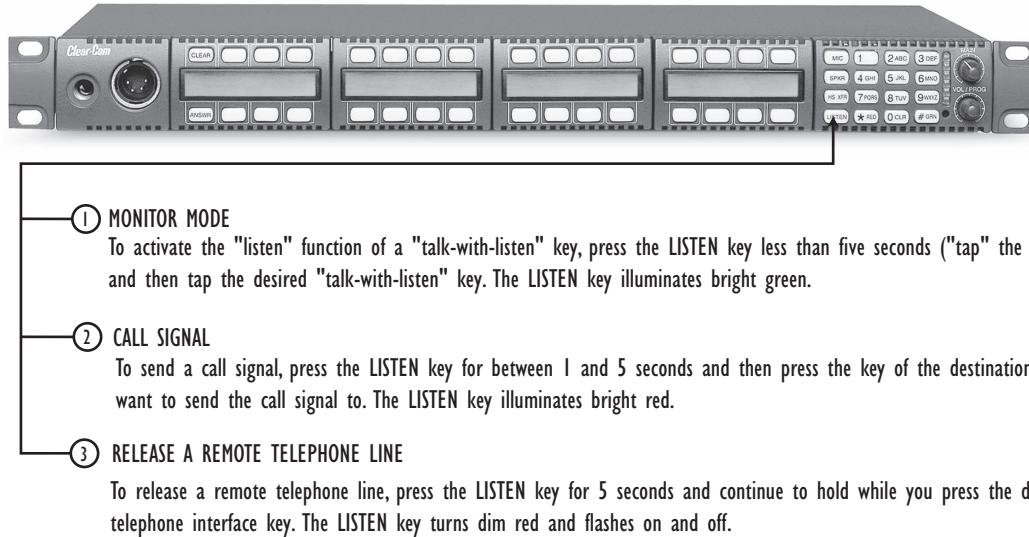
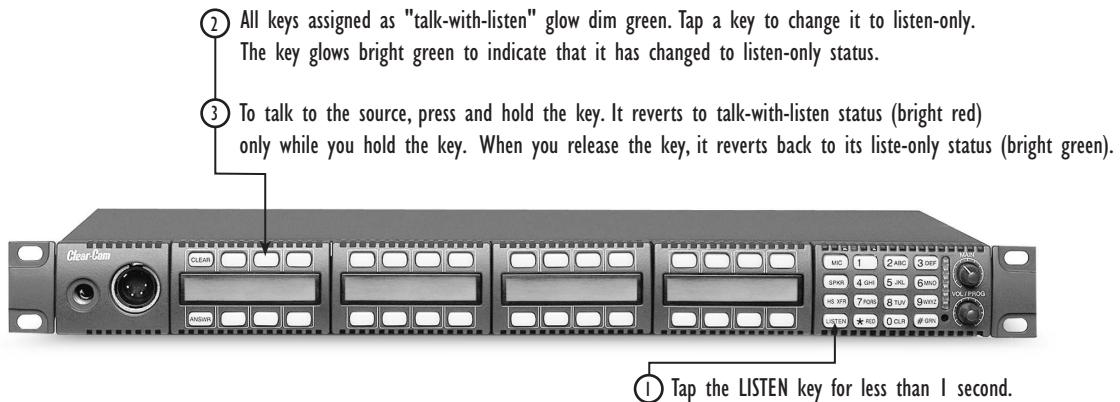


Figure 2-2: Accessing Features from the Listen Key

## Activating the “Monitor Mode” of a Talk-with-Listen Key

**Note:** *To avoid confusion, in this manual the LISTEN key on the function-key module is referred to in all capital letters. On your i-Series panel “LISTEN” is printed on this key in all capital letters as well. Keys on your panel programmed to “listen” are referred to in this manual in lower-case letters, as in “the listen key glows bright green.”*

The i-Series panel “monitor mode” allows you to momentarily change the status of a key from listen-only to talk-with-listen. By pressing and holding the listen-only key, you momentarily change it to a talk-with-listen key.



*Figure 2-3: Activating the “Monitor Mode” of a Talk-with-Listen Key*

You can scroll one item at a time through items in a displayed list by pressing the CLEAR key to scroll up and the ANSWR key to scroll down.

#### To activate the “monitor mode” of a talk-with-listen key:

1. Press the LISTEN key on the function key module for less than one second (“tap” the key).
  - Each key assigned as a talk-with-listen glows dim green to indicate that its “monitor mode” is available for activation.
  - The LISTEN key on the function key module glows bright green while in this mode.
2. Tap a dim-green key to activate it.  
The key glows bright green to indicate its change to an active listen-only key.
3. To talk to the source, press and hold the key.  
The key glows bright red to indicate that a talk-with-listen call is active. When you release the key, it reverts back to its active listen-only mode (bright green). The talk-with-listen function cannot be latched; it is only active while you press the key.

#### To cancel the key’s monitor mode and revert back to the talk-with-listen mode:

1. Tap the LISTEN key on the function-key module.
2. Tap the desired active listen-only key (bright green).  
The formerly active listen-only key now glows dim red to indicate that it has reverted back to its non-active talk-with-listen mode. If you press the key to talk, it glows bright red.

**Note: You must tap the LISTEN key on the function key module for each key you activate in “monitor mode.”**

## Sending Call Signals

A call signal is an electronic signal that is sent from one panel or interface to another to get a panel operator’s attention. It can be used

for a variety of more technical purposes as well, such as to activate a relay to open a door, set off an alarm, or activate a public address (PA) system.

In order to use this facility the destination panel's Call Signal Tone must be enabled. This is done in ECS via the Setup Matrix Hardware facility using "Advanced Settings" and "Audible Alerts" for the destination panel or panels. The "Call Signal Tone" option must be set to "True".

**To send a call signal:**

1. Press and hold the LISTEN key for between 1 and 5 seconds. The LISTEN key turns bright red to indicate that you have entered the "call-signal send" mode.
2. Press the key of the destination that you want to send the call signal to.  
A call signal of three loud beeps is sent to a destination each time that you press the destination's key.
3. To send a call signal to a new destination, press the new destination's key.  
A call signal is sent to the new destination each time you press that destination's key.
4. To exit "call-signal send" mode, tap the LISTEN key and release.
  - You can also exit "call-signal send" mode by simply not pressing a display key for five seconds. The mode will automatically time-out.
  - When you exit "call-signal send" mode, the LISTEN key changes from bright red to no illumination.

You can send a call signal to any destination with a designated key on your panel. If more than one destination is assigned to a key, each destination will receive the call signal. If the destination is a party line, then every panel listening on the party line will receive the call signal.

***Note: The call signal is sent at the page-override volume level, which is programmable in the Eclipse Configuration System. For more information, see the Eclipse Configuration System Manual.***

## **Releasing Remote Telephone Lines**

**To release a telephone interface that has been left off-hook:**

1. Enable "remote telephone release" for that panel in the Eclipse Configuration System.  
Often this feature will already be set up in the configuration system software. For more information, refer to the *Eclipse Configuration System Manual*.
2. Press and hold the LISTEN key for more than 5 seconds.  
The LISTEN key turns bright green and flashes on and off.

3. While still holding the LISTEN key, press the desired telephone interface key on any key module.  
The telephone interface will hang up. All audio paths to and from the telephone interface will be deactivated.
4. Release the LISTEN key to exit.

## SUMMARY OF FUNCTION KEY MODULE LIGHTS

Table 2-1 summarizes the meanings of the colors and blink rates for all the keys on the function key module.

GN MIC KEY	KEY COLOR	BLINK RATE
Gooseneck mic off	dim green	none
Gooseneck mic on	bright green	none
HS MIC KEY	KEY COLOR	BLINK RATE
Headset not present	off	none
Headset present and off	dim green	none
Headset present and on	bright green	none
SPKR ON KEY	KEY COLOR	BLINK RATE
Speaker on	dim green	none
Speaker off	bright green	none
LISTEN KEY	KEY COLOR	BLINK RATE
No function	off	none
Listen-only call mode	bright green	none
Call-signal send mode	bright red	none
Remote telephone hang-up	bright green	1x per second
0–9, *, # KEYS	KEY COLOR	BLINK RATE
No function	off	none
Key pressed or mode active	bright green	none
Dial mode	dim red	none
Dial mode and key pressed	bright red	none

Table 2-1: Colors and Blink Rates for Keys on Function Key Module



# 3

# ACCESSING I-SERIES ADVANCED FUNCTIONS

You access the advanced features from the function module's numeric keypad or from the feature menu.

i-Series intercom panels have advanced features that you access in one of the following two ways:

- By pressing the number key associated with the feature. For example, when you press the “1” key on the numeric keypad, you enter “telephone dialing” mode. Figure 3-1 shows the features associated with each number key on the numeric keypad. A fuller discussion of each feature follows.
- By scrolling through the feature menu. For example, you can scroll through the feature menu, and select “dial” to access the “telephone dialing” mode. The advantage of a menu is that you do not have to memorize each available key function. See “Selecting Features from the Menu” later in this chapter for more information.

Most of the features are available only when a panel is connected to the matrix, but some are available even when a panel is not connected to the matrix. The requirements for each feature are given in the following sections. Figure 3-1 and Table 3-1 below lists features and identify which number keys on the keypad are associated with each.

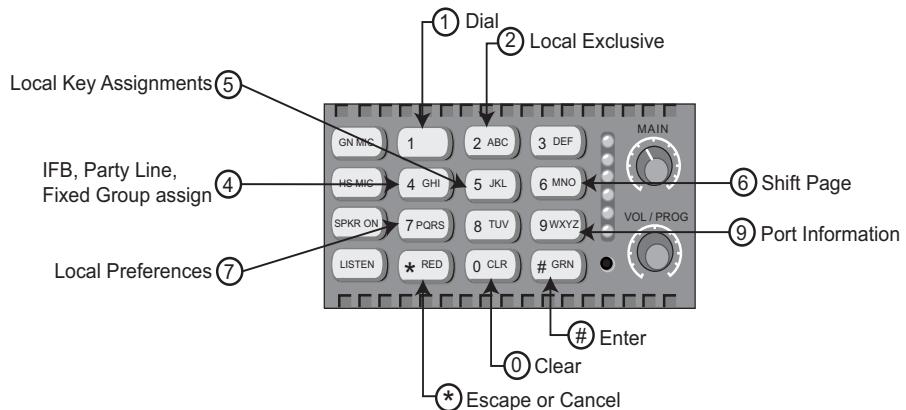


Figure 3-1: Features Accessed by Keys on the Numeric Keypad

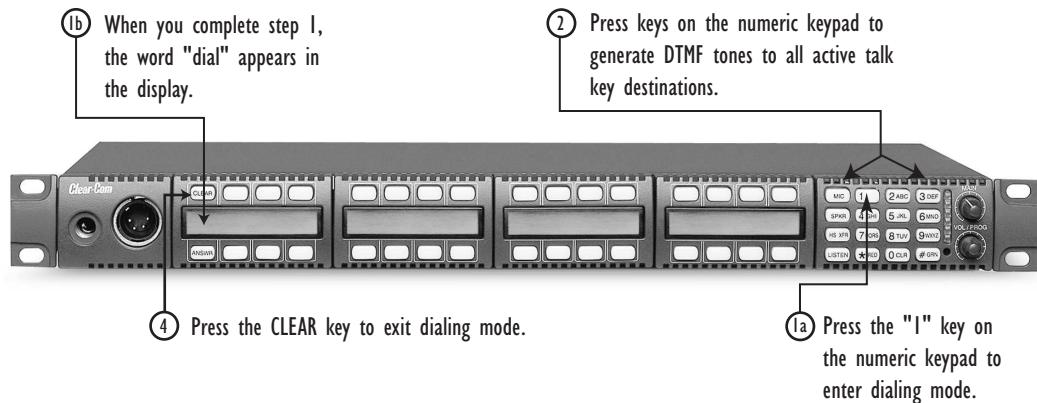
## OVERVIEW OF ADVANCED FEATURES

KEY	FUNCTION	DESCRIPTION
1	Dial	Enters telephone dialing mode.
2	Local Exclusive	Enters mode to temporarily deactivate all keys except the one being used.
3	Local Page Override	Enters mode to override current on/off and volume settings at a destination.
4	IFB, Party Line and Fixed Group assignment	Enters the setup mode for IFB, Party Line and Fixed Group to allow sources to be assigned as IFBs, or to Party Lines or Fixed Groups.
5	Local Key Assignments	Enters mode to assign sources and destinations in the system to keys on your panel.
6	Swap Page	Switches between the panel main page and the swap page.
7	Local Preferences	Enters the setup mode to adjust Listen Level Reset, Panel Mic Level, Headset Mic Level, Sidetone Level and Listen Level Adjust.
9	Port Information	Gives you the panel's port number, label, associated CPU card, and current firmware version number.
0 CLR	Clear	Clears the current display entry and takes you back to the previous menu.
* RED	Escape or Cancel	Abandons all unsaved programming and returns the panel to normal use.
# GRN	Enter	Saves the current programming changes and reverts the panel to normal use.
VOL/PROG KNOB	Display Contrast Adjust Baud Rate Adjust	Allows you to adjust contrast lighting on displays and to adjust the panel's baud rate

Table 3-1: Advanced Key Functions

## TELEPHONE DIALING FROM THE KEYPAD (#1 KEY)

You can dial from the keypad on a function key module as if you were dialing from a standard telephone keypad. When you press the number keys, standard DTMF tones are generated to all active talk key destinations. Note that this feature is only available when the central matrix is connected and online.



*Figure 3-2: Telephone Dialing from the Function Keypad Module*

**To generate standard DTMF tones to all active talk key destinations:**

1. Press the “1” key on the keypad to enter dialing mode.
  - The keypad becomes a telephone touch-tone dialing pad.
  - The word “dial” appears in the display below the “CLEAR” key.
  - All 12 valid dialing keys on the keypad glow dim red.
2. Press keys on the numeric keypad (0–9, \*, #) to generate standard DTMF tones to all active talk-key destinations.
3. Press the “CLEAR” key to exit dialing mode.

Dialing mode automatically times out if you do not press a key on the numeric keypad (0–9, \*, #) for five seconds.

*To select an item with the VOL/PROG knob, press the knob in, as you would press a key, when the desired item appears in the display.*

## ACCESSING LOCAL EXCLUSIVE (#2 KEY)

When you activate the “local exclusive” feature, all previously latched keys on your panel deactivate temporarily while you either talk to one destination or listen to one source. Note that the “local exclusive” feature is only active when the matrix is connected and online.

**To activate the local exclusive function:**

1. Press the “2” key on the keypad to enter “local exclusive” mode.
2. Press and release any talk or listen key (even an already latched key).
  - When you press and release a talk or listen key, all previously latched keys (both talks and listens) deactivate temporarily, and you can talk or listen from that key exclusively.
  - The feature is only active while the key is latched in “local exclusive” mode.
  - The “2” key on the keypad will glow bright green while this feature is active.

3. To exit “local exclusive” mode press the key you pressed in step 2 again to deactivate it.

- The previously latched keys will return to their active state.
- This feature does not work on the answer-back (ANSWR) key.

You can also select this feature from the menu. See “Accessing Feature Menus” later in this chapter for more information.

## LOCAL PAGE OVERRIDE (#3 KEY)

The “local page override” feature allows you to talk to one or more destination panels regardless of the on/off or volume settings at each panel’s speaker. The feature literally “overrides” the current on/off and volume settings at the destination.

You can adjust the local page override’s volume level in the Eclipse Configuration System program. By default, the volume is set up at 5 on a 1–10 scale, but it can be adjusted to any value on the scale.

Note that this feature is only active when the Matrix is connected and online.

### To activate local page override:

1. Press “3” on the keypad to enter “local page override” mode.
2. Press any talk key (even an already latched key).

- You can talk to all destinations associated with that key. The current on/off settings and volume levels will be overridden at those panels’ speakers.
- The “3” key on the keypad will glow bright green while this feature is active.
- Local page override does not work from the answer-back (ANSWR) key.

3. To exit “local page override,” release the pressed talk key.

Local page override mode automatically times out if you do not press a key on the function-key module for five seconds.

You can also enter the “local page override” mode by selecting it from the feature menu. See “Accessing Feature Menus” later in this chapter for more information.

Note that if a key cannot be page overridden because it is assigned as an interface or party line, there will not be an error message to indicate that the function is not available on that key.

## IFB, PARTY LINE AND FIXED GROUP ASSIGNMENTS (#4 KEY)

The “4” key allows local assignments to be made for IFBs, Party Lines and Fixed Groups. To access the assignment mode:

- Press the “4” key. The “CLEAR” key will illuminate red and “IFB” will be displayed below it.
- To access Party Line mode press the “CLEAR” key. “PL” will be displayed below it.
- To access Fixed Group mode press the “CLEAR” key again. “FG” will be displayed below it.
- Pressing the “CLEAR” key again will exit assign mode.

## **Setting Up IFB Sources and Destinations on an i-Series panel**

Only Global IFBs with Talk are valid as IFB destinations and only sources with listen are valid to be assigned to an IFB.

1. Press the “4” key so that the “CLEAR” key illuminates red and “IFB” is displayed below it.
2. All valid IFB destinations will flash red.
3. Press the front-panel button for the required IFB destination. Its light turns solid red, while all valid sources’ lights blink green.
4. Press a source’s button to assign it to the destination. Its light turns solid green. Pressing the button again deactivates the assignment.
5. Repeat steps 3 and 4 until all sources are assigned to the IFB destination.
6. Press the “CLEAR” button three times to exit IFB mode.

## **Setting Up Party Line members on an i-Series panel**

Only Talk and Listen keys are valid as members of a Party Line.

1. Press the “4” key so that the “CLEAR” key illuminates red and “IFB” is displayed below it.
2. Press the “CLEAR” key so that “PL” is displayed below it.
3. All available Party Lines flash red.
4. Press the key for the desired Party Line.
5. The key’s light becomes solid red and all available members’ lights flash green.
6. Press a key with the associated flashing green light of an available member to add it to the Party Line.
7. The light becomes solid green to indicate the member has been added to the Party Line.
8. To remove a member from the Party Line, press that member’s key. The solid green light associated with that key blinks green to indicate it is now available.
9. Repeat steps 6 and 7 until the Party Line contains all desired members.
10. Press the “CLEAR” key twice to exit Party Line mode.

## **Setting Up Fixed Group members on an i-Series panel**

Only Talk and Listen keys are valid as members of a Fixed Groups.

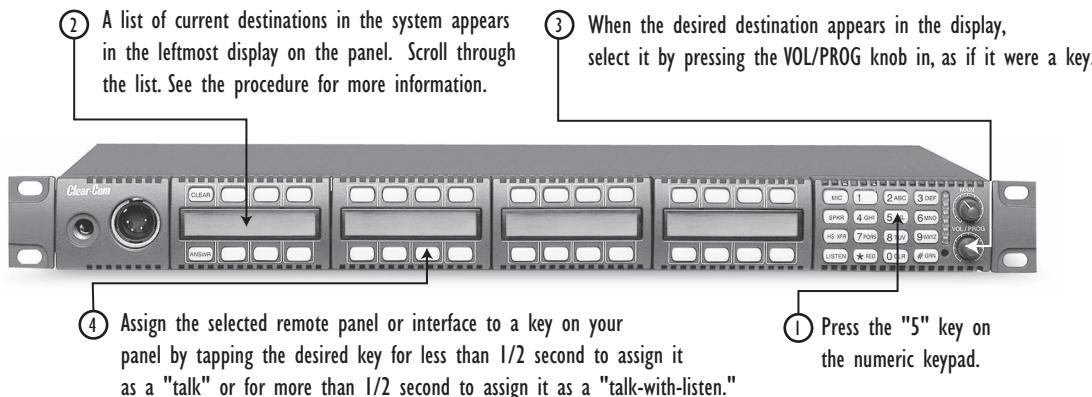
1. Press the “4” key so that the “CLEAR” key illuminates red and “IFB” is displayed below it.
2. Press the “CLEAR” key again so that “PL” is displayed below it.
3. Press the “CLEAR” key again so that “FG” is displayed below it.
4. All available Fixed Groups flash red.
5. Press the key for the desired Fixed Group.
6. The key’s light becomes solid red and all available members’ lights flash green.
7. Press a key with the associated flashing green light of an available member to add it to the Fixed Group.
8. The light becomes solid green to indicate the member has been added to the Fixed Group.
9. To remove a member from the Fixed Group, press that member’s key.  
The solid green light associated with that key blinks green to indicate it is now available.
10. Repeat steps 7 and 8 until the Fixed Group contains all desired members.
11. Press the “CLEAR” key to exit Fixed Group mode.

## **LOCAL KEY ASSIGNMENT (#5 KEY)**

The “pick list scroll” feature allows you to assign any intercom panel or interface in the system to a key on your panel directly from your panel. You can assign the panel or interface to your panel as a talk key, a listen key, or a talk-with-listen key.

To do this, you first access a list of all panels and interfaces in the system on the front-panel display of your i-Series panel. You then scroll through the list and select the panel or interface that you want to assign to your panel. In other words, you literally “pick” from a “list” that you “scroll” through. This feature is only available when the Matrix is connected and online.

Two procedures are described below. The first describes how to assign a remote destination to your panel as a “talk” or “talk-with-listen” key. The second describes how to assign a remote source to your panel as a “listen” key.



*Figure 3-3: Assigning a Remote Destination to a Talk or Talk-with-Listen Key*

**To assign a remote destination to a key on your panel as a “talk” or “talk-with-listen”:**

1. Press the “5” key on the numeric keypad to enter “pick list scroll” mode.
  - A list of current panels and interfaces in the system *that are available to assign as “talk” keys (or as “talk-with-listen” keys)* is displayed starting in leftmost key module’s display window.
  - The lists are sorted alphanumerically—with symbols first, then numbers, then letters. You can jump to the desired alphabetical area of the list by pressing the corresponding “letter” key on the keypad. Press the “A” key to jump to the first label that begins with an “A,” press the “B” key to jump to the first label that begins with a “B,” and so on.
2. Scroll through the list of current available “talks” and “listens” by rotating the PROG/VOL knob.
 

You can also scroll one horizontal line at a time by pressing the CLEAR key to scroll up the list and the ANSWR key to scroll down the list.
3. Select the desired panel or interface when it is highlighted in the display by pressing in and releasing the VOL/PROG knob.
4. Assign the selected remote panel or interface to a key on your panel by either tapping or pressing the desired key.
  - Tap a key for less than 1/2 of a second to assign it as a talk-only.
  - Press a key for more than 1/2 of a second to assign it as a talk-with-listen key.
5. After you have completed assigning keys, exit “pick list scroll” mode by pressing the ESCAPE key (labeled “\*RED”). To exit the current menu only, and return to the previous menu, press the FUNCTION-CLEAR key (labeled “0 CLR”).

**Note: If PIN codes are set up in the Eclipse Configuration System you must enter one of the four possible 4-digit PIN codes before entering Local Key Assignment mode. The display will ask for the PIN code at which time you must enter the correct 4-digit code.**

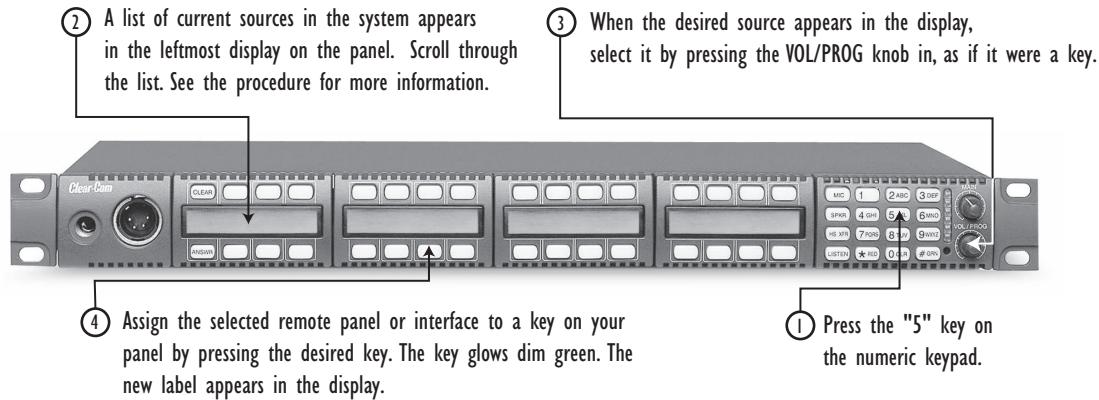


Figure 3-4: Assigning a Remote Source to a Listen Key

**To assign a remote source to a key on your panel as a “listen”:**

1. Press the “5” key on the numeric keypad to enter “pick list scroll” mode.  
A list of current panels and interfaces in the system *that are available to assign as “talk” keys (or as “talk-with-listen” keys)* is displayed starting in the leftmost key module’s display window.
2. Press the LISTEN key to display a list of current panels and interfaces in the system *that are available to assign as “listen” keys*.  
The list is sorted alphanumerically—with symbols first, then numbers, then letters. You can jump to the desired alphabetical area of the list by pressing the corresponding “letter” key on the keypad. Press the “A” key to jump to the first label that begins with an “A,” press the “B” key to jump to the first label that begins with a “B,” and so on.
3. Scroll through the list of current available “listens” by rotating the PROG/VOL knob.  
You can also scroll one horizontal line at a time by pressing the CLEAR key to scroll up the list and the ANSWR key to scroll down the list.
4. Select the desired panel or interface when it is highlighted in the display by pressing in and releasing the VOL/PROG knob.
5. Assign the selected remote panel or interface to a key on your panel by either tapping or pressing the desired key.  
The key glows green to indicate it is a “listen” and its new label appears in the display.

6. After you have completed assigning keys, exit “pick list scroll” mode by pressing the ESCAPE key (labeled “\*RED”). To exit the current menu only, and return to the previous menu, press the FUNCTION-CLEAR key (labeled “0 CLR”).

**Note:** If PIN codes are set up in the Eclipse Configuration System you must enter one of the four possible 4-digit PIN codes before entering Local Key Assignment mode. The display will ask for the PIN code at which time you must enter the correct 4-digit code.

**To clear a key’s “talk” assignment on your panel:**

1. Press the “5” key on the numeric keypad to enter “pick list scroll” mode.
  - A list of current *talks* (*destinations*) in the system is displayed starting in the leftmost key module’s display window.
  - The first item on the *talk* list is “clear.” It should be highlighted to indicate that it is available to be selected.
2. When the word “clear” is highlighted in the display, select it by pressing in and releasing the VOL/PROG knob.  
The leftmost module’s display window will revert to showing currently assigned sources and destinations.
3. Tap the key with the *talk* assignment that you want to clear.  
You will hear a confirmation tone of two loud beeps to indicate that the key’s assignment is cleared. The key’s label will disappear from the display and the key itself will not illuminate.

**To clear a key’s “listen” assignment on your panel:**

1. Press the “5” key on the numeric keypad to enter “pick list scroll” mode.  
A list of current *talks* (*destinations*) in the system is displayed starting in the leftmost key module’s display window.
2. To display a list of all *listens* (*sources*) in the system, press the LISTEN key.  
A list of current *listens* (*sources*) in the system is displayed starting in the leftmost key module’s display window.
3. The first item in the *listens* list is “clear.” It should be highlighted to indicate that it is available to be selected.
4. When the word “clear” is highlighted in the display, select it by pressing in and releasing the VOL/PROG knob.  
The leftmost module’s display window will revert to showing currently assigned sources and destinations.
5. Tap the key with the *listen* assignment that you want to clear.  
You will hear a confirmation tone of two loud beeps to indicate that the key’s assignment is cleared. The key’s label will disappear from the display and the key itself will not illuminate.

## SWAP PAGE (#6 KEY)

The “6” key toggles between the main page and the swap page. Pressing the “6” key with the main page displayed (normally the default panel state) causes the main panel assignments to be replaced by the swap page assignments.

Pressing the “6” key again reverts to the main page display.

## LOCAL PREFERENCES (#7 KEY)

The “local preferences” feature allows you to adjust your panel’s volume settings, including:

- Resetting listen levels to the default
- Adjusting the gooseneck microphone volume level
- Adjusting the headset microphone volume level
- Adjusting the sidetone volume level

This feature is only active when the Matrix is connected and online. An illustration and description of how to operate the local preferences feature follows. Each local preference is described in its own section.

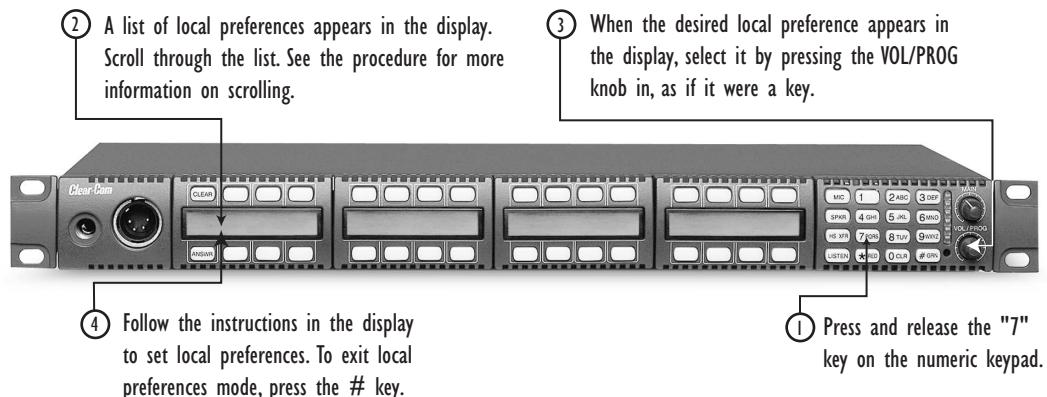


Figure 3-5: Adjusting Local Preferences

### To adjust a “local preference”:

1. Press the “7” key on the numeric keypad to enter “local preferences” mode.

A list appears in the leftmost display of the panel. You have a choice of five items: (1) listen level reset, (2) gooseneck mic volume level reset, (3) HS mic volume level reset, (4) sidetone volume level reset, and (5) exit. These options are described in detail immediately following step 5.

2. Scroll through the list by rotating the VOL/PROG knob.

You can also scroll one item at a time by pressing the CLEAR key to scroll up the list and the ANSWR key to scroll down the list.

3. When the desired item appears in the display above the ANSWR key, select it either by pressing the VOL/PROG knob in, or by pressing the ENTER key (labeled "#GRN").
4. Follow the directions in the display. Additional instructions for setting individual local preferences are given following step 5. Go to the section for the individual local preference you are adjusting.
5. To exit "local preferences" mode, press the ESCAPE key (labeled "\*RED") on the function keypad module. To return to the previous menu without saving any changes, press the "0" key (labeled "CLR"). You can also select "exit" from the local preferences menu to exit "local preferences" mode.

## LOCAL PREFERENCE OPTIONS

### Listen Level Reset

When you select Listen Level Reset, all listen keys are reset to the default level which is the highest possible volume. The leftmost display on the panel will read: "Listen Level Reset Sent to Matrix" for one second. Proceed to step 4 to exit "local preferences" mode.

### Gooseneck Microphone Volume Level

When you select this menu item, the leftmost display on the panel shows the current gooseneck microphone volume level, with choices for increasing or decreasing it. For example, the display may read:

Set Gooseneck Mic Volume Level  
+2 dB with increase/decrease choices of:  
(+7,+6,+5,+4,+3,+2,+1,0-1,-2,-3,-4,-5,-6,-7,-8)

In this example, the current gooseneck volume level is 2 dB. To increase the volume, press the ANSWR key. To decrease the volume, press the CLEAR key. Each time you press either the ANSWR key or the CLEAR key, you change the volume level by one increment. The selected volume level is highlighted in the display. You can also change the volume level by rotating the VOL/PROG knob.

When you reach the desired volume level, press either the ENTER key (labeled "#GRN"), or press the VOL/PROG knob in, as if it were a key, to save the information. Then exit "local preferences" mode.

The default outgoing microphone audio level is the highest possible level of +7 dB.

***Note: As you scroll through the volume-level scale, you will hear the gooseneck microphone's volume level change accordingly. To make the change permanent however, you must select the desired value on the scale by either pressing in the VOL/PROG knob or by pressing the ENTER key (labeled "#GRN") when the value appears in the display.***

*As you scroll through gooseneck microphone, headset microphone, and sidetone volume levels, you will be able to hear the increasing or decreasing volume levels. To make the change permanent, however, you must select the desired volume level when it appears in the display by pressing the ENTER key or the VOL/PROG knob.*

## Headset Microphone Volume Level

When you select Headset Microphone Volume Level from the menu, the leftmost display on the panel shows the current headset microphone volume level, with choices for increasing or decreasing it. For example, the display may read:

Set HS Mic Volume Level  
+2 dB with increase/decrease choices of:  
(+7,+6,+5,+4,+3,+2,+1,0,-1,-2,-3,-4,-5,-6,-7,-8)

In the example above, the current headset volume level is 2 dB. To increase the volume, you press the ANSWR key, and to decrease the volume, you press the CLEAR key. Each time you press either the ANSWR or CLEAR key, you change the volume level by one increment. The selected volume level is highlighted in the display. You can also change the volume level by rotating the VOL/PROG knob.

When you reach the desired volume level, either press the ENTER key (labeled "#GRN"), or press the VOL/PROG knob in, as if it were a key, to save the information. Then exit "local preferences" mode.

The default outgoing microphone audio level is the highest possible level of +7 dB.

***Note: As you scroll through the volume-level scale, you will hear the headset microphone's volume level change accordingly. To make the change permanent however, you must select the desired value on the scale by either pressing in the VOL/PROG knob or by pressing the ENTER key (labeled "#GRN") when the value appears in the display.***

## Sidetone Volume Level

When you select Sidetone Volume Level from the display, the leftmost display on the panel shows the current sidetone level, with choices for increasing or decreasing it. For example, the display may read:

Set Sidetone Volume Level  
+10 dB with increase/decrease choices of:  
(+30, +28, +26, +24, +22, +20, +18, +16, +14, +10, +8, +6,  
+4, +2, 0)

In this example, the current sidetone level is 10 dB. To increase the sidetone, you press the ANSWR key, and to decrease the sidetone, you press the CLEAR key. Each time you press either the ANSWR or CLEAR key, you increase the sidetone level by one increment. The selected volume level is highlighted in the display. You can also change the sidetone level by rotating the VOL/PROG knob.

When you reach the desired volume level, either press the ENTER key (labeled "#GRN"), or press the VOL/PROG knob in, as if it were a key, to save the information. Then exit "local preferences" mode.

**Note: As you scroll through the volume-level scale, the sidetone volume level will change accordingly. To make the change permanent however, you must select the desired value on the scale by either pressing in the VOL/PROG knob or by pressing the ENTER key (labeled "#GRN") when the value appears in the display.**

## Exit

When you select the “exit” menu item, you exit “local preferences” mode. To select the item, scroll to it, then press the VOL/PROG knob in or press the ENTER key (labeled “#GRN”).

## ACCESSING PORT INFORMATION (#9 KEY)

The port information feature gives you the following information about your panel:

- The panel’s port number at the central matrix
- The panel’s label at the central matrix
- The panel’s current firmware version number

Your panel must be connected to the central matrix to access all of the port information. If your panel is not connected to the central matrix, only the panel’s current firmware version number will be displayed.

### To obtain port information:

1. Press the “9” key on the numeric keypad to enter “port information” mode.  
The leftmost display on the panel will show the panel’s current matrix port number, matrix label, and firmware version number.
2. Press the ESCAPE key (labeled “\*RED”) to exit.  
The display will automatically time out after five seconds.

You can also access this feature through the menu. For more information, see “Accessing Feature Menus” later in this chapter.

## CLEARING THE CURRENT PROGRAMMING

Press the CLEAR key (labeled “0 CLR”) on the numeric keypad to clear the current entry on the leftmost display and take you back to the previous menu, if any.

## ESCAPING THE CURRENT PROGRAMMING

Press the ESCAPE key (labeled “\*RED”) on the numeric keypad to abandon all unsaved programming and revert the panel to normal use.

## ENTERING THE CURRENT PROGRAMMING

Press the ENTER key (labeled “#GRN”) on the numeric keypad to save the current programming changes and revert the panel to normal use.

## ADJUSTING BACKGROUND LIGHTING

You can adjust the background lighting on front-panel displays directly from your i-Series panel. You can also adjust the panel’s baud rate directly from the panel.

### To adjust background lighting on all front-panel displays on the panel:

1. Press the VOL/PROG knob in, as if it were a key, for three seconds. The panel’s leftmost display shows the first two items in a five-item list: (1) Set Baud Rate, (2) Display Contrast, (3) Module Information, (4) panel Information, and (5) Exit.
2. Scroll through the list by rotating the VOL/PROG knob.  
You can also scroll through the list one item at a time by pressing the “CLEAR” key to scroll up the list and the “ANSWR” key to scroll down the list.
3. When the list item “Display Contrast” is highlighted, select it by pressing in and releasing the VOL/PROG knob, as if it were a key. A submenu, as shown in Figure 3-6, appears in the display showing the current contrast value for the panel’s displays.

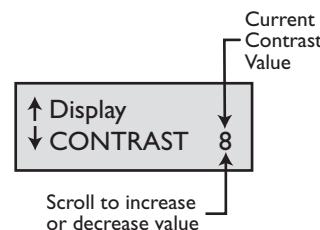


Figure 3-6: Submenu of Display Contrast Values

4. Scroll through the range of values by rotating the VOL/PROG knob. The values range from the lowest contrast value of 0 to the highest contrast value of 10.
5. When the desired value appears in the display, select it by pressing the ENTER key (labeled “#GRN”).  
The selected value goes into effect immediately.
6. Exit from the submenu by pressing the ESCAPE key (labeled “\*RED”). To escape the submenu and return to the previous menu, press the CLEAR key (labeled “CLR”).

### To change the panel’s baud rate:

1. Press the VOL/PROG knob in, as if it were a key, for three seconds.

The panel's leftmost display shows the first two items of a five item list: (1) Set Baud Rate, (2) Display Contrast, (3) Module Information, (4) Panel Information, and (5) Exit.

2. Scroll through the list by rotating the VOL/PROG knob.

You can also scroll through the list one item at a time by pressing the CLEAR key to scroll up the list and the ANSWR key to scroll down the list.

3. When the list item "Set Baud Rate" is highlighted, select it by pressing in and releasing the VOL/PROG knob, as if it were a key. A submenu, as shown in Figure 3-7, appears in the display showing the current baud rate.

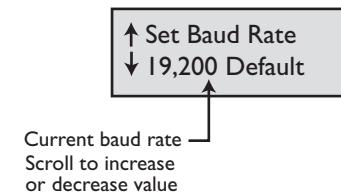


Figure 3-7: Submenu of Baud Rate Values

4. Scroll through the submenu of baud rates by rotating the VOL/PROG knob.

The submenu gives you a choice of four baud rates: 19,200 (Default), 9600, 4800, and 2400 baud.

5. When the desired baud rate appears in the display, select it by pressing the ENTER key (labeled "#GRN").

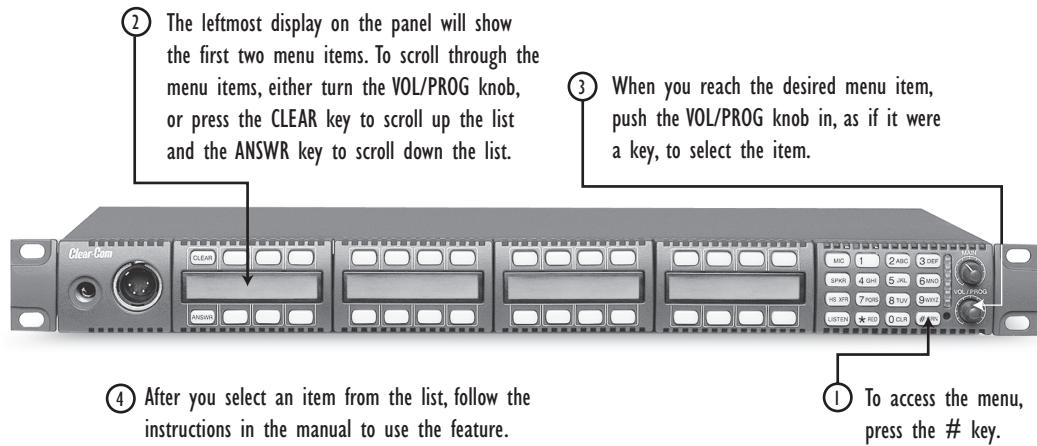
The selected baud rate goes into effect immediately.

6. Exit from the submenu by pressing the ESCAPE key (labeled "\*RED"). To escape the submenu and return to the previous menu, press the CLEAR key (labeled "0 CLR").

**Note:** *The Eclipse MVX-A16 card does not accept anything other than 19k2 baud rate. These baud rates are useful when used with 3rd party interfaces only.*

## SELECTING A FEATURE FROM THE FEATURE MENU

The advantage of using the menus is that you can see all of the available features listed and then select the desired feature simply by pressing the VOL/PROG knob when the feature's menu item appears in your panel's display.



*Figure 3-8: Selecting a Feature from the Feature Menu*

#### To select a feature from the feature menu:

1. Press the ENTER key (labeled “#GRN”) on the numeric keypad.  
The leftmost display on the panel will show the first two menu items.
2. Scroll through the menu items by pressing the “ANSWR” key to scroll down the list and the “CLEAR” key to scroll up the list. Each time you press the “ANSWR” key or the “CLEAR” key, you scroll one item on the list.  
You can also rotate the VOL/PROG knob to scroll through the menu items.
3. When you reach the desired menu item, press the VOL/PROG knob in, as if it were a key, to select the item.  
To exit from the menu, press the ESCAPE key (labeled “\*RED”).
4. After you select a feature, follow the instructions from the appropriate section in this chapter to use the feature.

**Note:** You can also select a menu item simply by first pressing the ENTER key (labeled “#GRN”), then pressing the number key that corresponds to the menu item—for example, the 1 key for the first menu item, the 2 key for the second menu item, and so on. This method is often quite faster than scrolling through several menu items to select an item. The same procedure can be used for submenus.

# 4

# CONNECTING TO AN ECLIPSE MATRIX, TO AC POWER, AND TO AUDIO OPTIONS

## REAR-PANEL MODULES

You connect an i-series intercom panel to the central matrix, to audio options, and to an expansion panel through the connectors located on the panel's rear panel. The connectors are organized into the following two modules:

- The communications module, which is standard on all i-series intercom panels. This module connects an i-Series panel to the central matrix and, if required, to an expansion panel.
- The auxiliary options module, which as its name implies, is optional. This module connects an i-Series panel to a variety of audio and control functions. The functions available from this module are described later in this chapter.

The panel's rear panel also contains an AC power connector to the panel's internal universal AC power supply.

Figure 4-1 illustrates the rear panel of an i-series intercom panel.

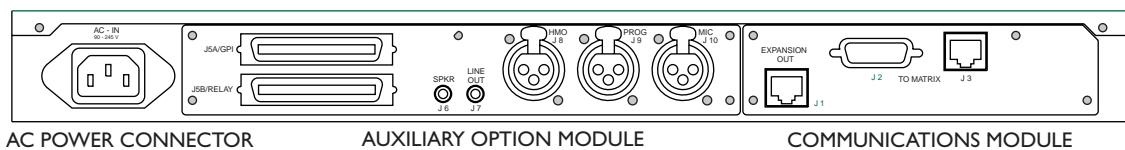


Figure 4-1: Rear Panel of an i-Series Intercom Panel

## AC POWER

The leftmost connector in the illustration, labeled “AC Power Connector,” connects the panel to the internal universal AC power supply. The power supply operates over a voltage range of 90 to 245 VAC and a frequency range of 45 to 65 Hz. The maximum power input is 60 watts, with 30 watts typical and 30 A (amps) peak inrush.

## COMMUNICATIONS MODULE

The communications module connects an i-Series panel to the central matrix and to an expansion panel. There are three connectors on the communications module, labeled J1 through J3, as shown in Figure 4-2.

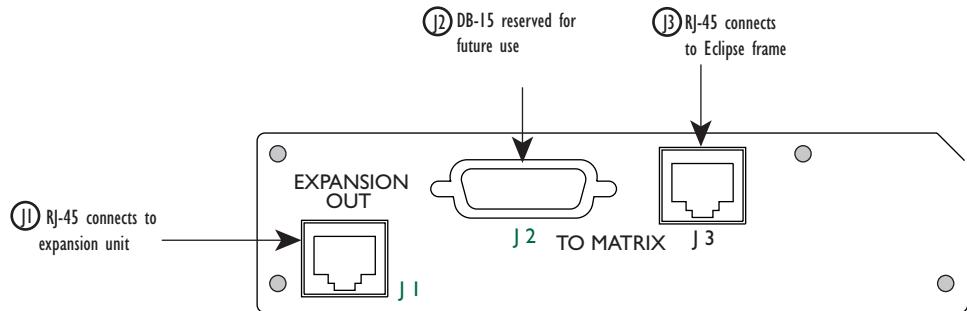


Figure 4-2: Communications Module Connectors

### **J1 Expansion Out Connector**

The connector labeled J1 is an RJ-45F that connects the i-Series panel to an expansion panel. Shielded category-5 cable is required.

### **J2 DB-15M Connector (Reserved for Future Use)**

The connector labeled J2 is a DB-15M connector reserved for future use.

### **J3 To Matrix Connector**

The connector labeled J3 is an RJ-45F that connects the i-Series panel to an Eclipse matrix frame. Shielded category-5 cable is required.

## AUX-101 AUXILIARY OPTIONS MODULE

The auxiliary options module connects your i-Series panel to the following audio and control inputs and outputs:

- General purpose inputs
- Relay outputs
- Speaker-feed output
- Line-level output
- Hot-microphone output
- Program input
- Auxiliary microphone input

Figure 4-3 shows the location of each connector on the auxiliary options module.

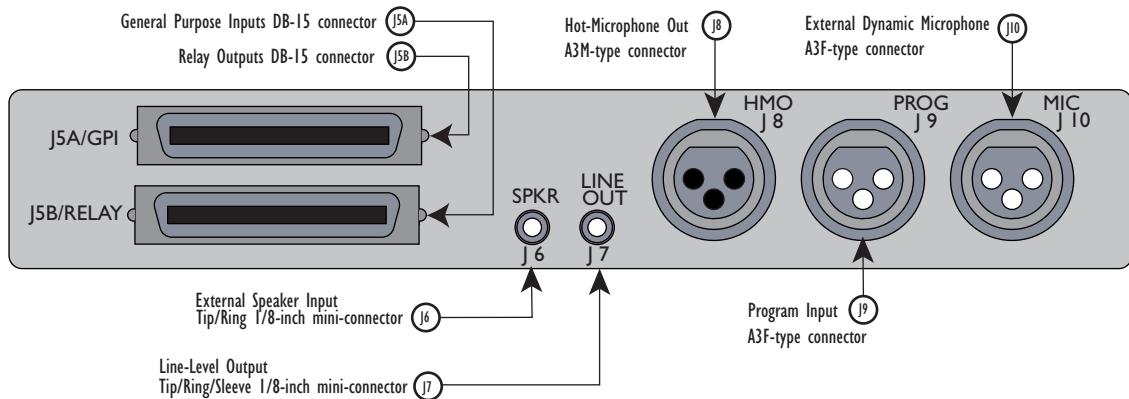


Figure 4-3: Auxiliary Options Module Connectors

### **J5A General Purpose Inputs Connector**

The DB-15F connector labeled “J5A” connects your i-Series panel to two local general purpose inputs (GPIs). The remaining six local general purpose inputs are reserved for future use.

The general purpose inputs connector is provided so that you can connect an external logic device—such as an external foot switch, a panel-mounted switch, or the logic output of some other device—to your panel.

When the external logic device is activated, it sends a control signal into your panel’s microprocessor to perform one of several preset functions, such as turning the panel’s microphone off or on, muting the microphone’s output, or turning the panel’s speaker off. You choose the function to be performed from the Eclipse Configuration System under “Advanced Settings” in the “Logic Inputs” menu. This allows the logic inputs to be configured from a drop-down list of items described below.

Before wiring a logic device to the GPI connector, you must first select the logic device’s function in the Eclipse Configuration System. For more information, refer to the *Eclipse Configuration System Manual*.

The setting options are:

- Microphone On/Off
- Mute Mic Output to Frame
- Microphone Off (Momentary)
- Answerback Talk/Clear
- Studio Announce

*With the GPI connector, you can connect an external logic device—such as an external foot switch, a panel-mounted switch, or the logic output of some other device—to your panel.*

- Speaker Off
- PTT: Activate All Talk Keys
- Activate Talk Switch #1
- Activate Talk Switch #2
- Activate Listen Labels
- PTT: Activate Two-Way Radio Talk Keys

These settings are described in detail in the following sections.

### **Microphone On/Off (Toggle)**

The “Microphone On/Off” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to shut the panel’s microphone on or off.

#### **To use a logic device to turn the panel’s microphone off and on:**

1. Select the “Microphone On/Off” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to turn the panel’s microphone on. Switch off the logic device to turn the panel’s microphone off.

### **Mute Microphone Output to Frame**

The “Mute Mic Output to Frame” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to shut off the audio going from the panel to the matrix frame.

Note that this feature does not turn off the “hot-microphone” output described later in this chapter. The A3M standard XLR connector labeled “J8” on the back of your i-Series panel is the hot-microphone output connector. It provides a line-level output of the selected microphone’s audio (headset or panel) that is always “on” (or “hot”). Only the panel’s microphone on/off key can override this output.

#### **To use a logic device to shut off the audio going from the panel to the frame:**

1. Select the “Mute Mic Output to Frame” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to shut off the audio going from the panel to the frame.

Note that the “hot-microphone” output has not been shut off.

## **Microphone Off (Momentary)**

The “Microphone Off” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to momentarily shut off the panel’s microphone.

While you press and hold the switch on the remote device, the microphone is shut off, but when you release the switch, the microphone resumes normal operation.

### **To use a logic device to turn the panel’s microphone off momentarily:**

1. Select the “Microphone Off (Momentary)” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to shut the panel’s microphone off momentarily.

While you press and hold the switch on the logic device, the microphone is shut off, but when you release the switch, the microphone resumes normal operation. This function cannot be latched.

## **Answerback Talk/Clear**

The “Answerback Talk/Clear” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to function as the panel’s answer-back key.

### **To use a logic device to activate the panel’s answerback key:**

1. Select the “Answerback Talk/Clear” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to activate the panel’s answer-back key. Holding down the switch activates a talk path to the current destination in the answer-back stack.  
Note that the logic switch, like the answer back key itself, cannot be latched. It functions momentarily only.
4. To clear the current call, and go to the next call in the answer-back stack, quickly press and release the switch.

## **Studio Announce**

The “Studio Announce” function momentarily turns off all “talk” paths leaving the panel and sends the panel’s microphone audio out through the Studio Announce output. This function overrides external IFB and ISO, interrupting matrix communications to these external systems.

### **To use a logic device to activate studio announce:**

*You can activate all latched keys at a panel with an external logic device, such as a headset with a push-to-talk switch.*

1. Select the “Studio Announce” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to activate the panel’s studio announce. Holding down the switch activates a talk path to the studio announce output.

Note that the logic switch, like studio announce itself, cannot be latched. It functions momentarily only.

*You can install a logic device to activate a key assigned to a 2-way radio.*

### **Speaker Off**

The “Speaker Off” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to shut off the panel’s loudspeaker.

#### **To use a logic device to shut off the panel’s loudspeaker:**

1. Select the “Speaker Off” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to shut off the panel’s loudspeaker.

### **PTT: Activate All Talk Keys**

The PTT: Activate All Talk Keys function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate all latched keys at your panel. When the logic device is not activated, you will not be able to talk from any latched key at your panel.

For example, some headsets are equipped with a push-to-talk switch on their headset cords. The push-to-talk switch can be wired to operate as a logic device. When an intercom operator wants to talk to any destination with a latched key on his panel, he will only be able to do so if he first pushes the push-to-talk switch on the headset cord.

#### **To use a logic device to activate all latched talk keys:**

1. Select the “PTT: Activate All Talk Keys” option in the Eclipse Configuration System.
2. Attach a logic device (such as a foot switch, panel-mounted switch, a push-to-talk headset, and so on) to the i-Series panel’s GPI connector.
3. Switch on the logic device to activate all latched keys at your panel.  
The logic device will activate keys latched both before and after you enabled this function in the Eclipse Configuration System.

Note that the latched keys at your panel may appear to be active, since their talk lights will illuminate, but they actually only activate when you switch on the connected logic device. Any controls (relays, etc.)

assigned to the keys along with the audio functions are now also only activated when signaled by the remote device.

You can, however, activate a talk path on any key by pressing and holding the key in momentary mode while you talk. The PTT: Activate All Talk Keys function only affects latched keys.

### **Activate Talk Switch #1**

The “Activate Talk Switch #1” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate the panel’s upper leftmost talk key.

#### **To use a logic device to activate the panel’s leftmost talk key:**

1. Select the “Activate Talk Switch #1” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to activate the panel’s upper leftmost talk key.

This feature is momentary only, so that you must press and hold the logic device’s switch to activate the panel’s talk key. When you release the switch, the panel’s talk key is no longer activated. The panel’s talk key cannot be latched with the Activate Talk Switch #1 option.

### **Activate Talk Switch #2**

The “Activate Talk Switch #2” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate the panel’s *second* upper leftmost talk key (the key directly to the right of the leftmost upper key).

#### **To use a logic device to activate the panel’s second upper leftmost talk key:**

1. Select the “Activate Talk Switch #1” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to activate the panel’s second upper leftmost talk key.

This feature is momentary only, so that you must press and hold the logic device’s switch to activate the panel’s talk key. When you release the switch, the panel’s talk key is no longer activated. The panel’s talk key cannot be latched with the Activate Talk Switch #2 option.

The relay outputs connector connects to three single-pole double-throw (SPDT) relays.

Contact ratings for the relays are 30 VDC at 1 A.

## Activate Listen Labels

The “Activate Listen Labels” function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate all latched keys that are listen keys.

### To use a logic device to activate the listen keys:

1. Select the “Activate Listen Labels” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, a panel-mounted switch, or the logic output of another device) to the i-Series panel’s GPI connector.
3. Switch on the logic device to activate the panel listen keys.

## PTT: Activate 2-Way Radio Talk Keys

The PTT: Activate 2-Way Radio Talk Keys function allows you to set up an external logic device, such as a panel-mounted switch, a foot switch, or the logic output of some other device, to activate all latched keys at your panel *that are assigned to a 2-Way Radio Interface*. The PTT: Activate 2-Way Radio Talk Keys function operates similarly to the PTT: Activate All Talk Keys function, except that it only affects latched keys *assigned to a 2-Way Radio Interface*. All other latched keys at your panel operate normally and are not activated by the logic device.

When the logic device is not activated, you will not be able to talk from any latched key *assigned to a 2-way radio* at your panel.

For example, some headsets are equipped with a push-to-talk switch on their headset cords. In this case, when the intercom operator wants to talk to a 2-way radio from a latched key, he will only be able to do so if he first pushes the push-to-talk switch on the headset cord.

This function is valuable in applications that use 2-way radios because typically these systems transmit on only one frequency, and if more than one person transmits on the same frequency at any one time, the radio waves are interfered with so that no radio operator in the system can hear.

Using the PTT: Activate 2-Way Radio Talk Keys function allows an operator to determine precisely when he transmits audio on a 2-way radio interface.

### To use a logic device to activate a key assigned to a 2-way radio:

1. Select the “PTT: Activate 2-Way Radio Talk Keys” option in the Eclipse Configuration System.
2. Connect a logic device (such as a foot switch, panel-mounted switch, a push-to-talk headset, and so on) to the i-Series panel’s GPI connector.
3. Switch on the logic device to activate all latched keys *assigned to 2-way radios* at your panel.

The logic device will activate keys latched both before and after you enabled this function in the Eclipse Configuration System.

Note that the latched keys *assigned to two-way radio keys* at your panel may *appear* to be active, since their talk lights will illuminate, but they are only active when you switch on the connected logic device. Any controls (relays, etc.) assigned to the 2-way radio keys along with the audio functions now also are only active when signalled by the remote device.

You can, however, activate a talk path from any key *assigned to a 2-way radio* by pressing and holding the key in momentary mode while you talk. The PTT: Activate 2-Way Radio Keys function only affects latched keys.

## Relay Outputs Connector

The DB-15F connector labeled "J5B" connects your i-Series panel to three single-pole double-throw (SPDT) relays with contact ratings of 30 VDC (volts direct current) at 1 A (ampere).

A relay is a switch that you control remotely. You program the relay in the Eclipse Configuration System to close a contact whenever an intercom panel's key is pressed. When the contact is closed it completes an electronic circuit's signal path so that a remote device, such as a light, is powered.

You can program a relay to mute a speaker, to turn on an applause light, to turn on a door lock, or for a variety of other functions. For example, to get the attention of a panel operator working in a high-noise environment such as a control booth, you can program a relay to switch on a light at his panel each time he receives an incoming call, thus insuring that he will not miss the incoming call.

The i-Series panel has three relays: the auxiliary relay, the mute relay, and the studio announce (SA) relay.

### Mute Relay

The mute relay is controlled by the Eclipse Configuration System. It is typically used to decrease or shut off an externally mounted loudspeaker. When you activate this feature, pressing any talk key on the panel will decrease or shut off the volume at an externally mounted loudspeaker. This function helps to ensure that noise from the external loudspeaker does not disrupt the communication at the intercom panel.

Both normally open and normally closed contacts are provided. They are rated at 30 VDC (volts direct current) at 1 A (ampere). The mute relay is not designed for switching mains AC line voltage. To switch an external device running on mains AC line voltage, use an external relay (or other switching mechanism) activated by the relay.

## Auxiliary Relay

The auxiliary relay is controlled by the Eclipse Configuration System. When you attach the programmable relay to any source or destination's label in the intercom system through the Eclipse Configuration System, whenever that label's key is pressed on any panel in the system, the relay activates as well.

Typically, a relay is used to activate an external device such as an applause light in a studio, a cue light, or a security door lock. For example, you can program a relay so that whenever anyone in the intercom system presses a key to talk to a specific panel, the relay in that panel will activate and turn on a visual indicator (such as a light) to get the panel operator's attention.

***Note: You can activate a relay that is independent of any talk-or-listen function by creating a “control” label in the Eclipse Configuration System. When you activate the control label, only the relay activates. No audio signal activates in conjunction with the relay.***

## Studio Announce (SA) Relay

The Studio Announce (SA) relay is controlled by the Eclipse Configuration System. The SA relay momentarily turns off all “talk” paths leaving the panel and sends the panel's microphone audio out through the SA output. This function overrides external IFB and ISO, interrupting matrix communications to these external systems.

You can program the relay to activate whenever you press a designated source or destination's key at the intercom panel.

## ⑯ External Speaker Input Connector

The 1/8-inch tip/sleeve mini-connector labeled “J6” connects to and powers an external speaker. Its impedance rating is 4–8 Ohms and its power rating is 1/2 watt at 4 Ohms.

Note that when you plug an external speaker into this connector, the front-panel internal speaker is still active. You can deactivate one or both speakers through the Eclipse Configuration System.

The front-panel's main-volume knob controls the volume for both the rear-panel and front-panel speakers. The volume of both speakers is the same.

## ⑰ Line-Level Output Connector

The 1/8-inch tip/ring/sleeve mini-connector labeled “J7” is a line-level, transformer-balanced output of all of the audio that comes to the panel

from the central matrix. All of the audio that you would hear at a panel's speaker, from all sources, is sent through this connector. The output's volume is at line level, bypassing the panel's audio controls.

This output is typically connected to an externally powered speaker, amplifier, or ceiling speaker system.

The line-level output connector's output impedance is 600 Ohms and its level is nominally 0 dBu. Frequency response is 50 Hz–15 kHz ( $\pm 2$  dB).

## **(8) Hot-Microphone Output Connector**

The A3M standard XLR connector labeled "J8" provides a line-level output of the selected microphone's audio (headset or panel) that is always "on" (or "hot"). Only the panel's microphone on/off key can override this output.

This connector's output impedance is 600 Ohms. Its level is nominally 0 dBu. Frequency response is 50 Hz–15 kHz ( $\pm 2$  dB).

A typical application is to permanently wire the panel's microphone audio output to all cameras so that the camera operators can hear the director at all times, regardless of what other tasks they are performing. This audio output can also be connected to many types of external speakers, such as external wall speakers. The purpose of this output is to provide an audio output that is always "on" and cannot be interrupted by other audio sources.

***Note: The Eclipse Configuration System's "listen" or "eavesdropping" function will accomplish the same results as the hot-microphone output. See the Eclipse Configuration System Manual for more information.***

## **(9) Balanced Program Input Connector**

The A3F standard XLR connector labeled "J9" connects an external source of audio to your panel so that you can hear it in addition to the intercom audio at your panel. The external source of audio, or "program" audio, can be heard on your panel's speaker and headset, but it cannot be heard by other panels in the Eclipse matrix system.

## **(10) External Dynamic Microphone Input Connector**

The A3F standard XLR connector labeled "J10" is a balanced input for an external dynamic microphone. It is not transformer isolated. Its input level is -40 dBu with a gain adjustment range of  $\pm 5$  dB. Impedance is 200 Ohms.

***Note: Dynamic microphones generate their own power while electret microphones do not. The J10 connector cannot be modified for an electret microphone.***

## CONNECTING TO AN I-SERIES EXPANSION PANEL

An i-series expansion panel connects to an i-series intercom panel and gives you access to 32 additional keys. Figure 4-4 illustrates an i-series expansion panel. Both the basic and advanced keys on an expansion panel operate the same as their corresponding keys on an i-Series panel.

The expansion panel is available with either five-character LCD displays or with areas for paper labels. It connects to an i-Series panel through an RJ-45 connector on the rear panel.



*Figure 4-4: i-Series panel Expansion Panel*

# OPERATING A V-STATION

The v-station expansion panel, referred to as the “v-station,” gives you separate rotary control knobs for adjusting source listen levels, with a real-time visual display of listen levels as you adjust them. The v-station’s four level-control modules (v-modules) allow you to adjust listen levels for 16 individual sources. Figure 5-1 illustrates a v-station expansion panel.



*Figure 5-1: v-Station Expansion Panel*

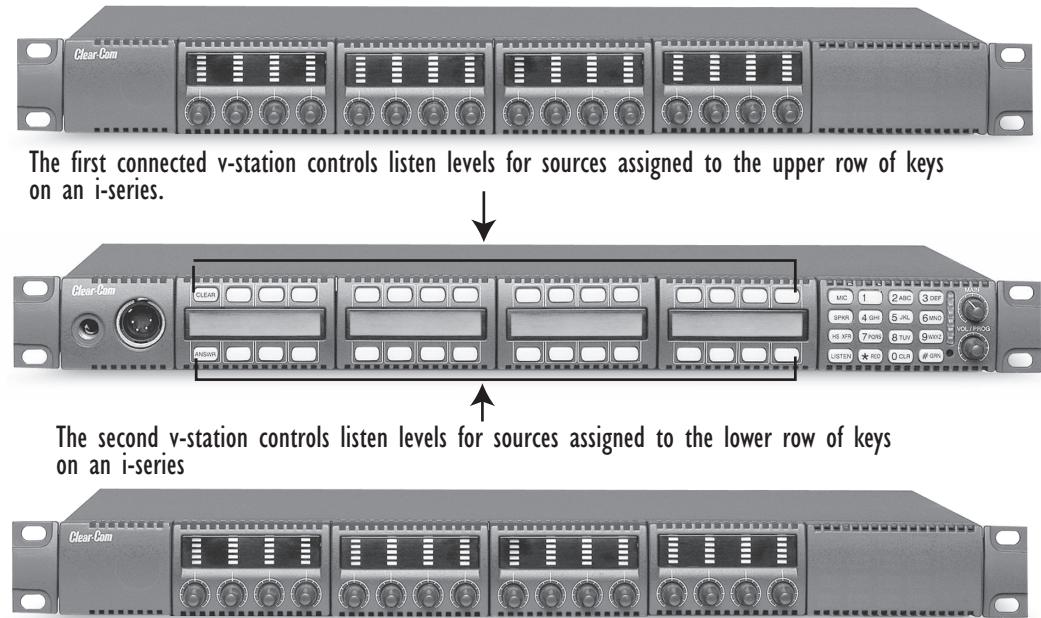
One v-station controls the listen levels for the upper row of key assignments on the i-Series panel or i-Series expansion panel. A second v-station controls the listen levels for the lower row of key assignments on the i-Series panel or i-Series expansion panel, as shown in Figure 5-2.

Note that any v-station rotary control knob associated with a “clear” or “answer-back” key on an i-Series panel does not operate, as those keys have special functions.

A v-station connects to an i-Series panel through RJ-45 connectors labeled “expansion in” and “expansion out” on the rear of each panel. Figure 5-3 shows how to wire the panels using CAT-5 cable.

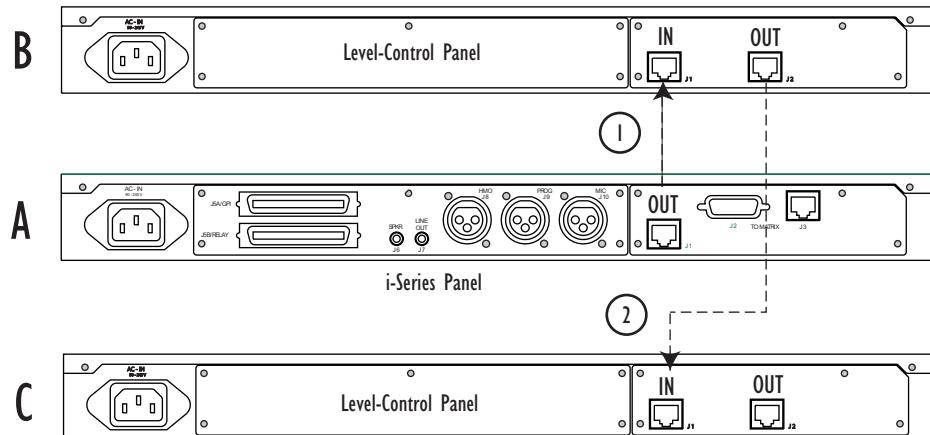
If you connect two v-stations to an i-Series panel, the v-station connected to the i-Series panel’s “expansion out” connector controls the volume for the sources assigned to the i-Series panel’s upper row of keys. The next v-station, which connects to the first v-station’s “expansion out” connector, controls the listen levels for the sources assigned to the i-Series panel’s lower row of keys.

V-station panels are no longer available to new sales.



*Figure 5-2: Two v-stations control and display listen levels for one i-Series panel*

### Connecting an i-Series Panel to two v-Station Expansion Panels ...



1. Connect the OUT connector of the main i-Series panel (A) to the IN connector of the first v-station expansion panel (B).
2. Connect the OUT connector of the first v-station expansion panel (B) to the IN connector of the second v-station expansion panel (C).

\*NOTE: The connectors are actually labeled "expansion out" and "expansion in," but have been shortened to IN and OUT on the diagram for clarity.

*Figure 5-3: Connecting two v-stations to an i-Series panel*

## ALLOWABLE CONFIGURATIONS

You can connect one i-Series panel expansion panel and up to four v-stations to an i-series intercom panel. To form a valid configuration, you cannot connect more than two v-stations together in the “daisy-chain.”

The following table shows all panel combinations which form a valid configuration. A configuration starts with the main panel, which is an i-Series panel with four display key modules, and proceeds with the various combinations of i-Series panel expansion panels and v-stations. The “expansion out” connector of each panel connects to the “expansion in” connector of the next panel in the configuration, forming a “daisy-chain.”

In the table “main i-Series panel” refers to an i-Series panel with four display key modules, “i-expansion” refers to an i-Series panel expansion panel with four display key modules, and “v-station” refers to a v-station expansion panel.

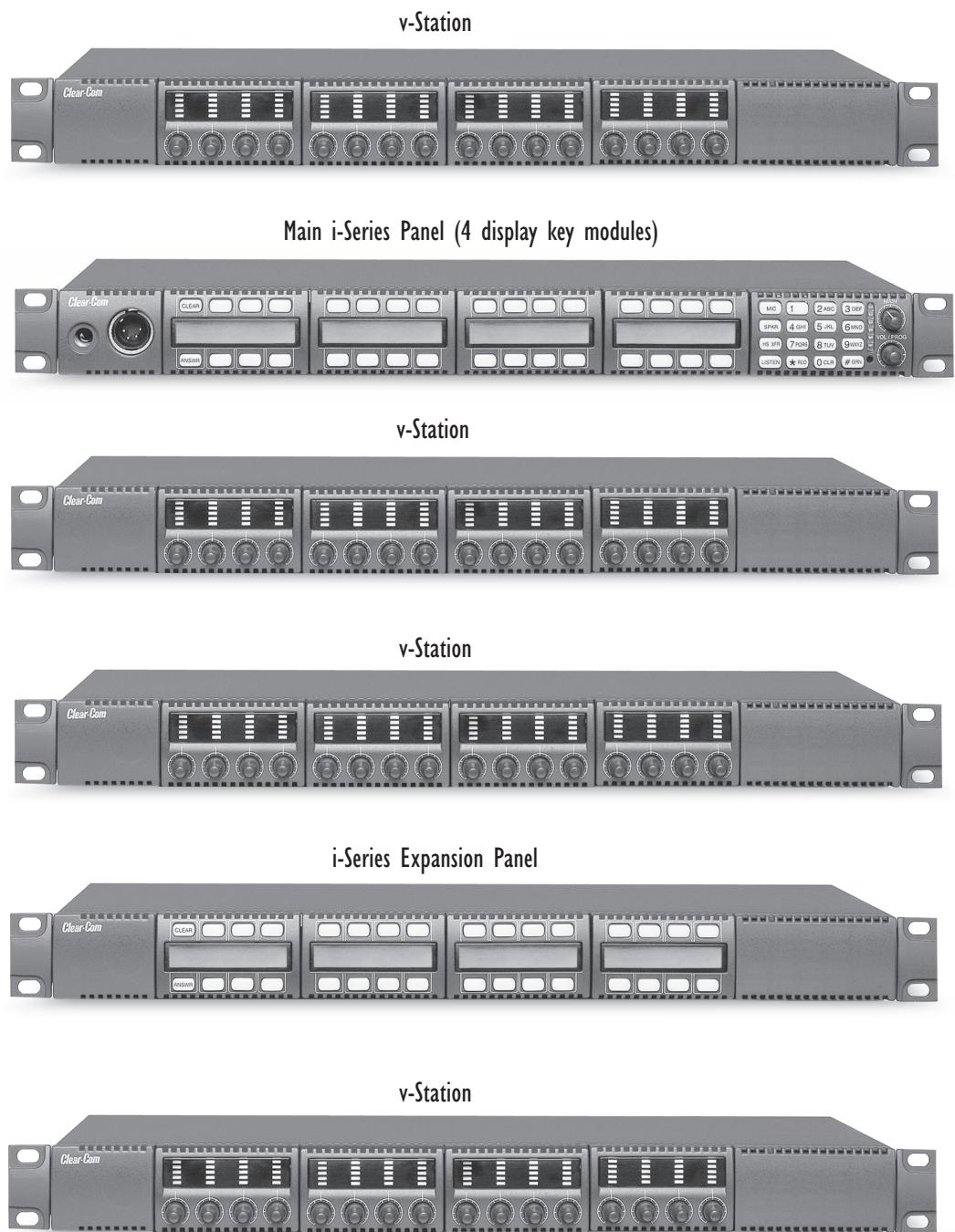
FIRST POSITION	SECOND POSITION	THIRD POSITION	FOURTH POSITION	FIFTH POSITION	SIXTH POSITION
main i-Series panel					
main i-Series panel	v-station				
main i-Series panel	v-station	v-station			
main i-Series panel	i-expansion				
main i-Series panel	v-station		i-expansion		
main i-Series panel	v-station	v-station		i-expansion	
main i-Series panel	v-station	i-expansion	v-station		
main i-Series panel	v-station	v-station	i-expansion		i-expansion
main i-Series panel	v-station	i-expansion	v-station	v-station	
main i-Series panel	v-station	v-station	i-expansion	v-station	v-station

Table 5-1: All Possible Valid Configurations of v-Stations

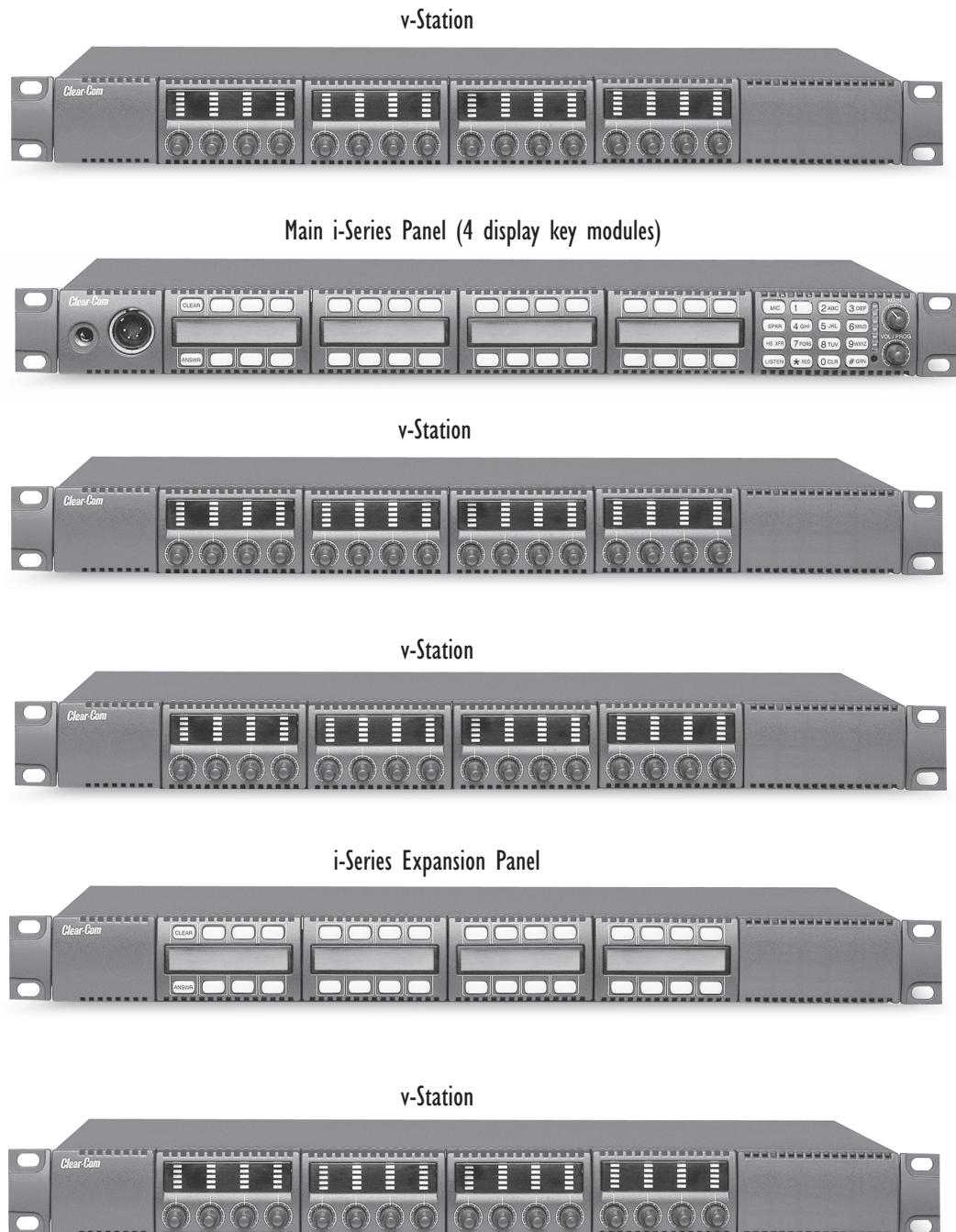
## A FULLY POPULATED CONFIGURATION

Figure 5-4 shows an example of a fully populated configuration, as the configuration would appear in an equipment rack. Figure 5-5 shows how to connect the panels together with CAT-5 cable.

You can remove any of the v-stations in a fully populated system without affecting the key assignments of the remaining v-stations.



*Figure 5-4: A fully populated configuration of v-stations*



*Figure 5-5: Connecting a fully populated configuration of v-stations*



# 6

# INSTALLING AN I-SERIES INTERCOM PANEL

This chapter describes how to install an i-series intercom panel. It also gives wiring diagrams for the panel's rear-panel connectors. For programming information, see the *Eclipse Configuration System Manual*.

## EQUIPMENT PLACEMENT

All i-series intercom panels require one rack unit of space (1 RU) in a standard 19-inch (48.26 cm) rack.

Put all intercom panels at a comfortable operational height. Leave at least 2 inches (5 cm) of clearance at the rear of the panel's chassis to allow for cable connectors and access to the rear-panel controls. For proper ventilation, make sure ventilation openings are not blocked.

**WARNING:** *To reduce the risk of fire or electric shock, do not expose the unit to rain or moisture.*

## MAINS AC POWER

Each i-Series panel has an internal power supply, with a removable AC power cord. The power supply is “universal,” operating over a voltage range of 90 to 245 VAC and 50 to 60 Hz. The maximum dissipation is 40 W.

## ADJUSTMENTS

No initial adjustments are required to set up the panels other than the standard input level adjustment made through the Eclipse Configuration System.

## CONFIGURATION

Assign each panel's name and other parameters by using the Eclipse Configuration System. For instructions, see the *Eclipse Configuration System Manual*.

# WIRING

i-Series intercom panels use a twisted 4-pair transmission scheme to connect them to the matrix frame using the industry standard RJ-45 connector. Refer to *Installing an Eclipse Matrix System: An Overview* for connector installation and use, and the type of cable needed for connection between panels and frames.

Each pair of the twisted 4-pair wire has the following function:

- Pair 1 transmits analog audio from the matrix port to the panel.
- Pair 2 transmits digital data from the panel back to the matrix card port.
- Pair 3 transmits audio from the panel to the matrix card port.
- Pair 4 transmits digital data from the matrix port back to the panel.

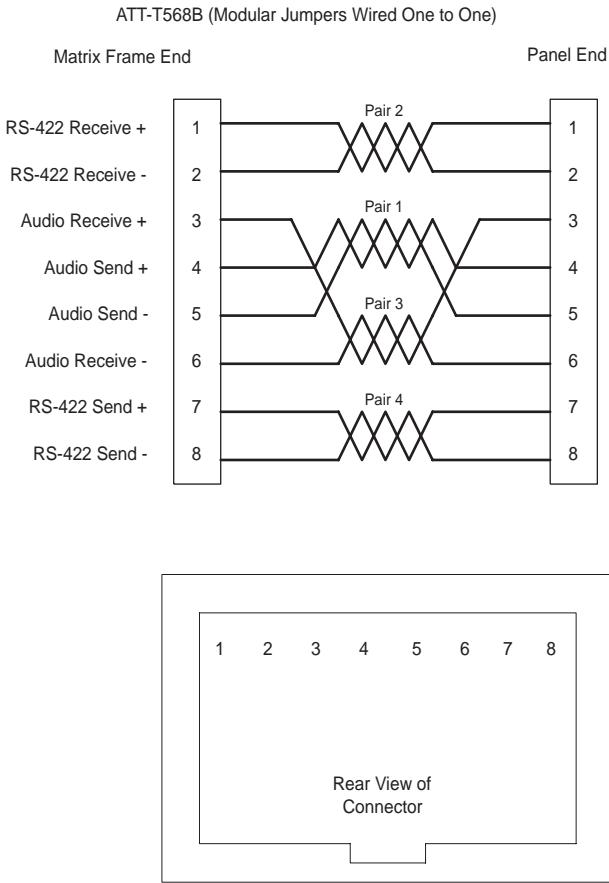


Figure 6-1: Matrix Frame to Panel Wiring

## PINOUT DIAGRAMS

The diagrams on the following pages give you the pinout configurations of the i-Series panel's rear-panel connectors. For operating instructions for each connector's output or input, refer to the Operation Chapter of this manual.

Pinout configurations for the following connectors are included:

- Expansion Out Connector (J1)
- RJ-45 to Matrix Connector (J3)
- General Purpose Inputs Connector (J5A)
- Relay Output Connector (J5B)
- Speaker-Feed Output Connector (J6)
- Line-Level Output Connector (J7)
- Hot Microphone Output Connector (J8)
- Program Input Connector (J9)
- Auxiliary Microphone Input Connector (J10)

## EXPANSION OUT CONNECTOR (J1)

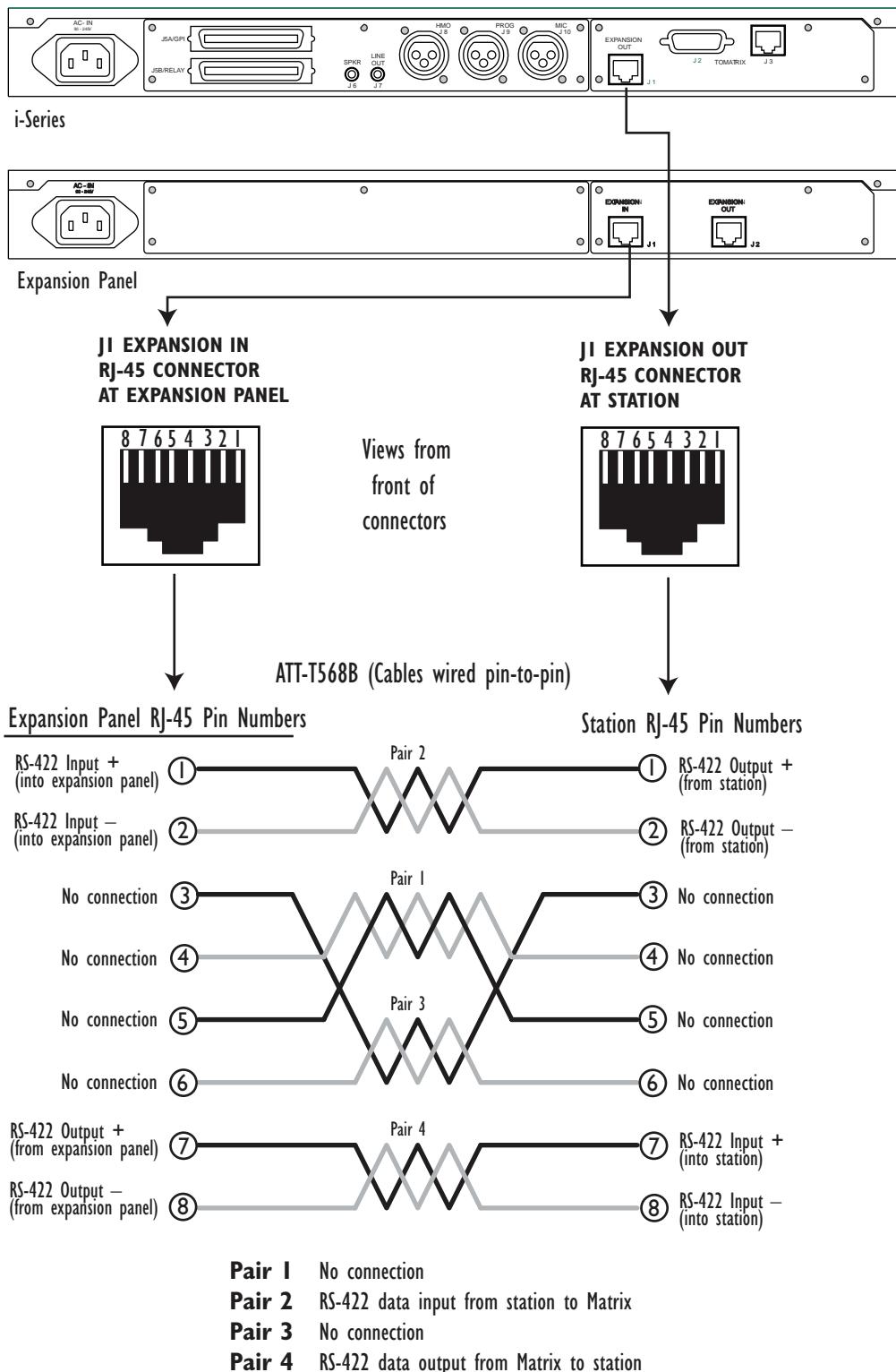


Figure 6-2: Expansion Out Connector Pinout Diagram

## RJ-45 TO MATRIX CONNECTOR (J3)

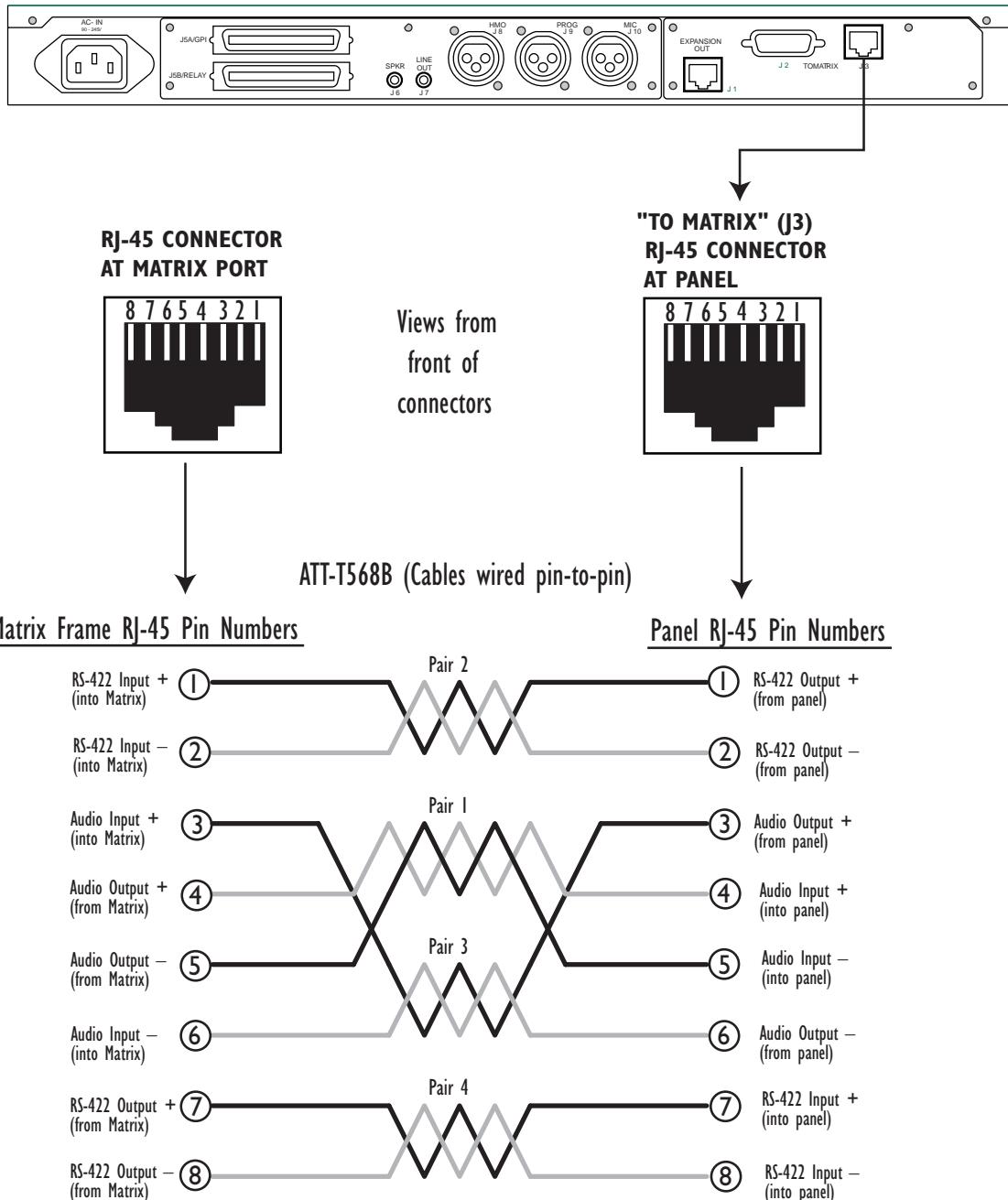


Figure 6-3: RJ-45 to Matrix Connector Pinout Diagram

## GENERAL PURPOSE INPUTS CONNECTOR (J5A)

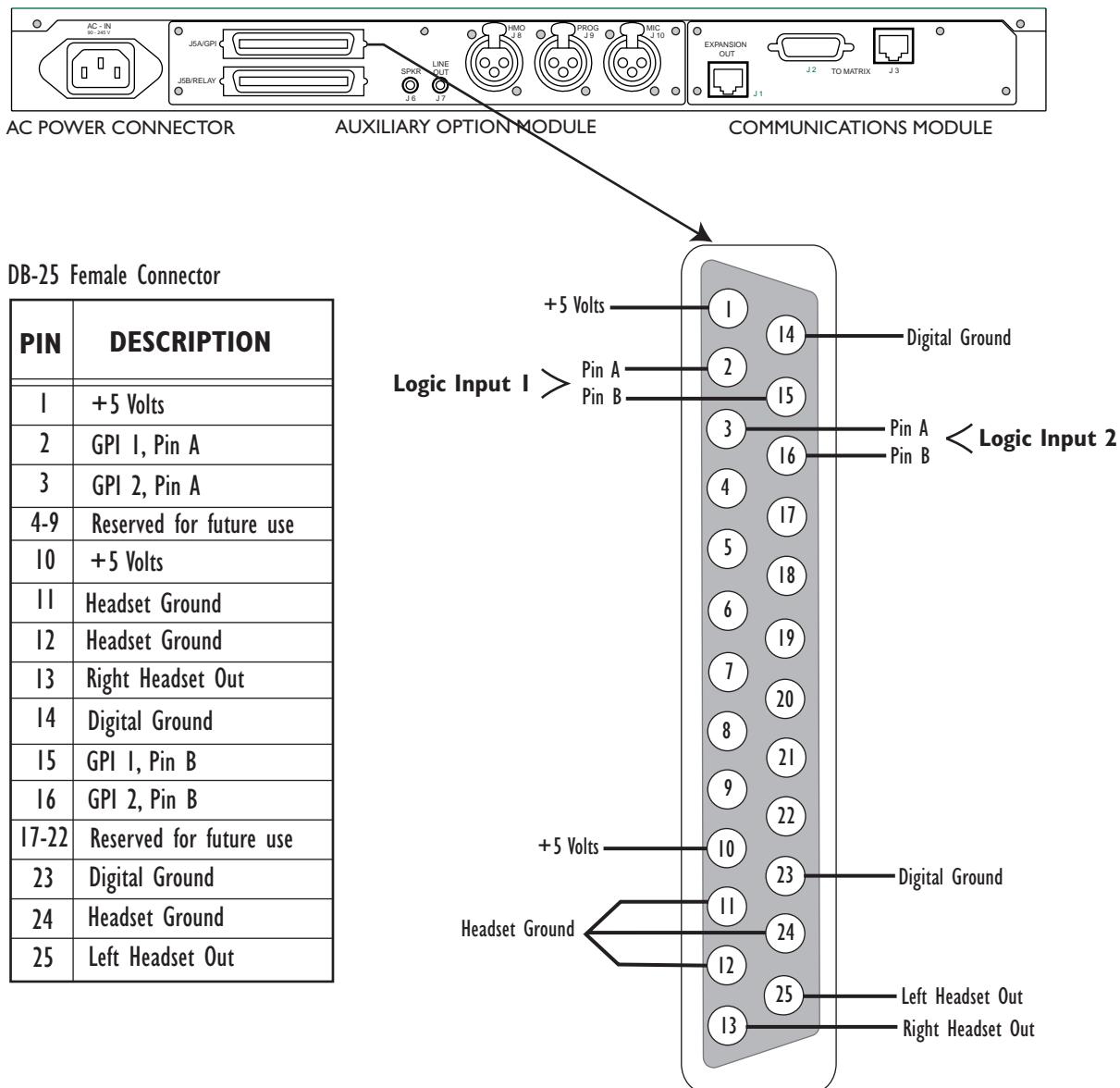


Figure 6-4: General Purpose Inputs Connector Pinout Diagram

## RELAY OUTPUT CONNECTOR (J5B)

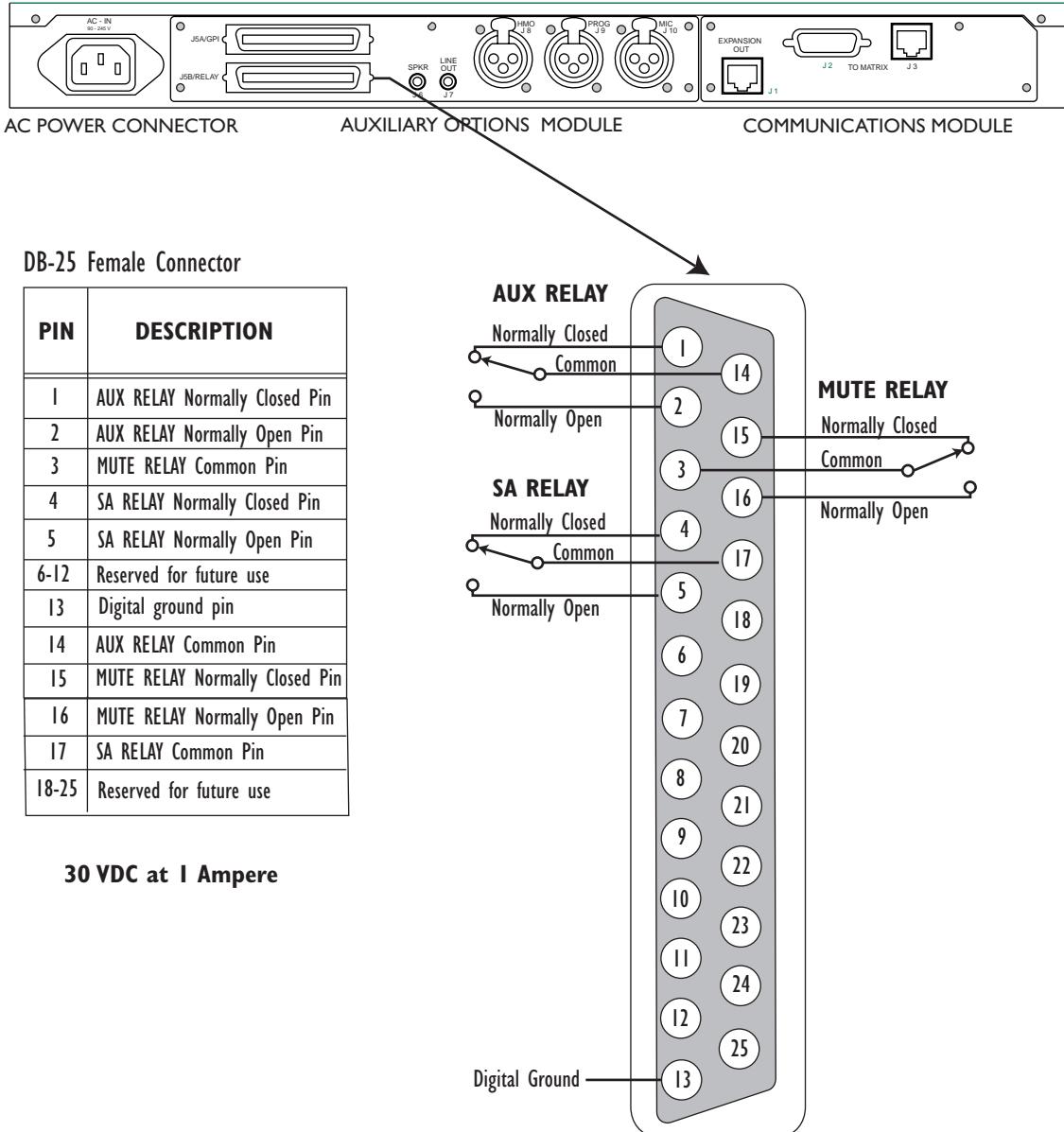


Figure 6-5: Relay Outputs Connector (J3) Pinout Diagram

## SPEAKER-FEED OUTPUT (J6) LINE-LEVEL OUTPUT (J7)

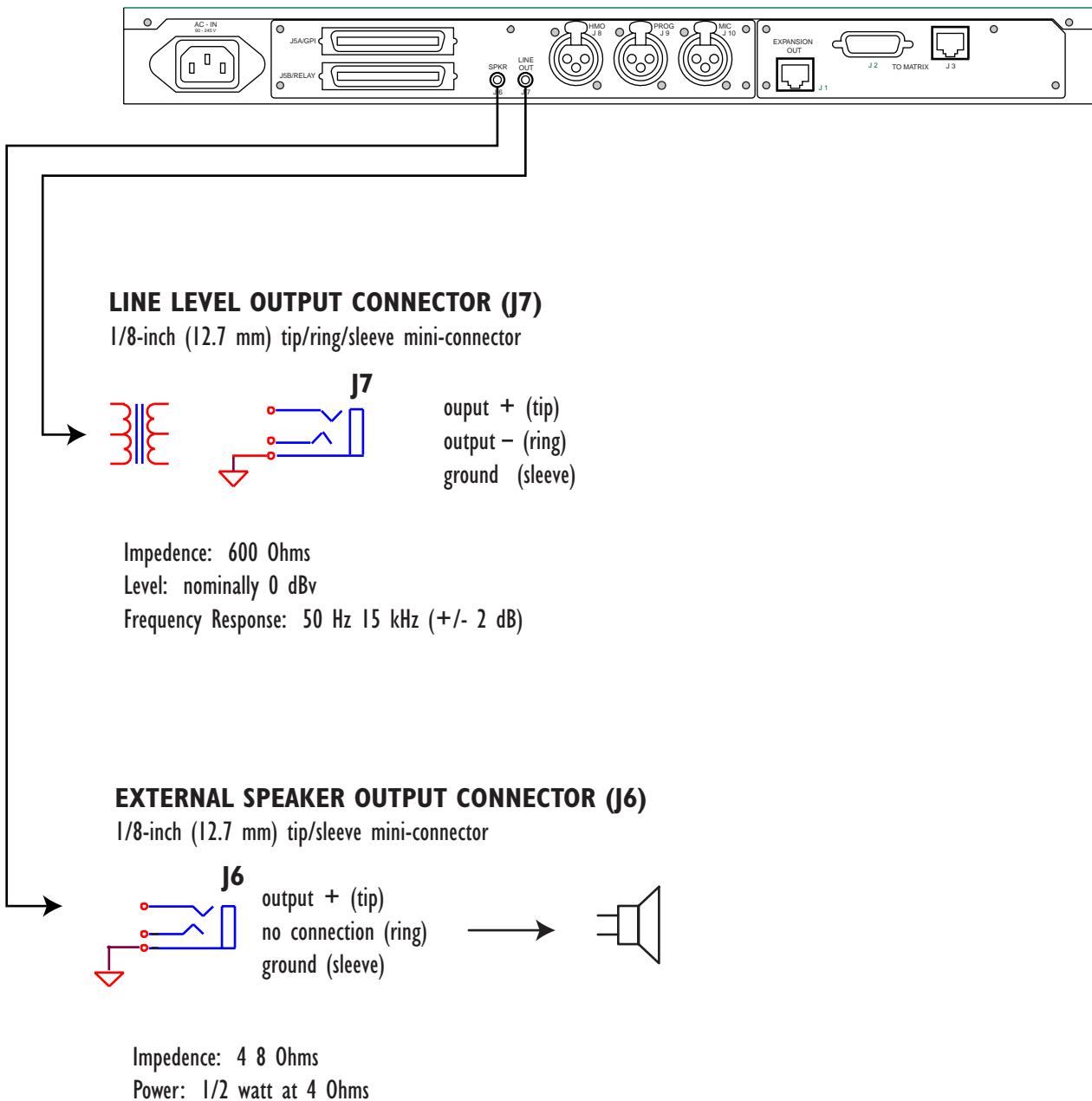
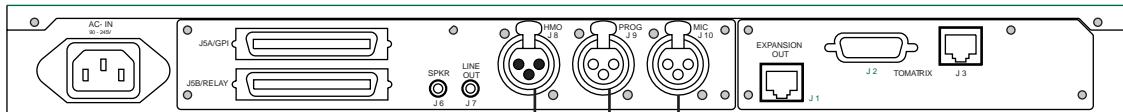


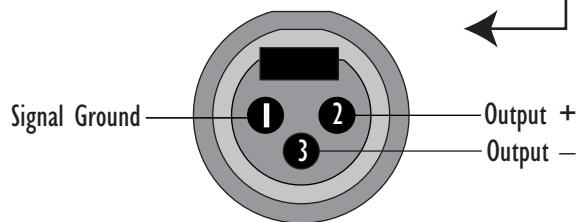
Figure 6-6: Connector Pinout Diagrams for Speaker-Feed Output and Line-Level Output

HOT MICROPHONE OUTPUT (J8)  
 PROGRAM INPUT (J9)  
 AUXILIARY MICROPHONE INPUT (J10)



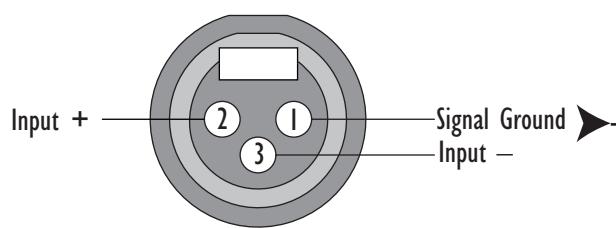
**Hot Microphone Output (Line Level) Connector (J8) A3 Male**

PIN	DESCRIPTION
1	Signal Ground
2	Output +
3	Output -



**Program Input (Line Level)Connector (J9) A3 Female**

PIN	DESCRIPTION
1	Signal Ground
2	Input +
3	Input -



**Auxiliary Microphone Input (Mic Level) (J10) A3 Female**

PIN	DESCRIPTION
1	Signal Ground
2	Input +
3	Input -

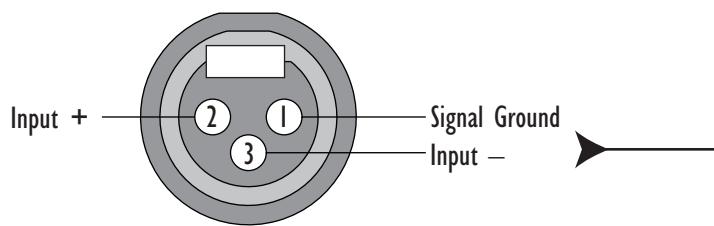


Figure 6-7: Connector Pinout Diagrams for Hot Microphone Output (J8), Program Input (J9), and Auxiliary Microphone Input (J10)



# 7

# MAINTAINING AN I-SERIES INTERCOM PANEL

This chapter provides maintenance information: troubleshooting tips, block diagrams, component layout drawings, bills of materials, and schematics.

**CAUTION:** *These servicing instructions are for use by qualified personnel only. To reduce the risk of electrical shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.*

## GENERAL TROUBLESHOOTING

Every i-Series panel's microprocessor has a reset button located, as shown in Figure 1, in an unmarked hole located next to the program volume knob (labeled "VOL/PROG"). If a panel acts erratically, try resetting it. Often this will clear the problem.

To reset a panel, insert a small screwdriver or a piece of wire (such as a bent paper clip) into the hole and push the reset button. Another way to reset the panel is to disconnect and re-connect the AC power cord.

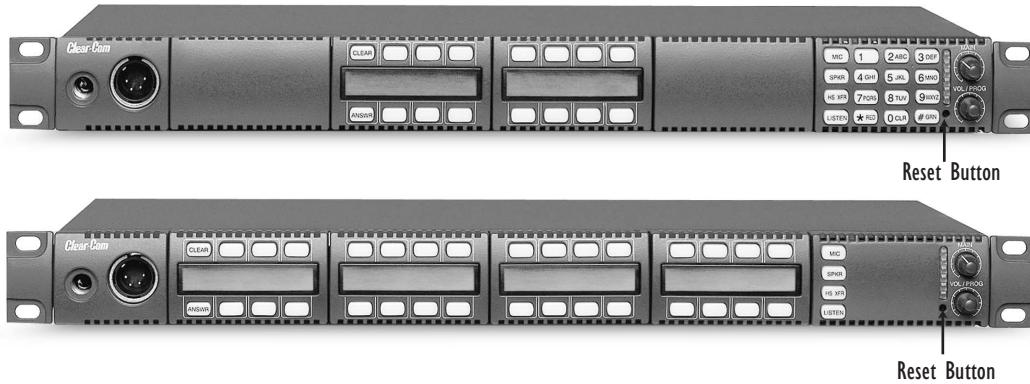


Figure 7-1: Reset the panel if problems occur

## TROUBLESHOOTING TIPS

Listed below are some of the more common problems you may experience while using an i-Series panel, the possible causes, and suggested solutions.

SYMPTOM	CAUSE	SOLUTION
A key does not light when pressed.	The key has not been assigned in the Eclipse Configuration System.	<ol style="list-style-type: none"> <li>1. Ensure that key has a label assigned to it in the Eclipse Configuration System. (The key will not light without an assigned label.)</li> <li>2. Reset the panel.</li> <li>3. Replace the panel.</li> </ol>
The panel's displays and keys do not light.	Power to the panel is off.	<ol style="list-style-type: none"> <li>1. Check mains AC power to the panel.</li> <li>2. Replace the panel.</li> </ol>
The display shows unexpected characters.		<ol style="list-style-type: none"> <li>1. Power the panel off and turn it back on.</li> <li>2. Reset the panel's matrix card in the matrix frame.</li> <li>3. Replace the panel.</li> </ol>
Keypad function keys do not operate, or the panel beeps when a key is pressed.	The function may have been inhibited from the Eclipse Configuration System.	<ol style="list-style-type: none"> <li>1. Check the Eclipse Configuration System to be sure the function is enabled.</li> <li>2. Reset the panel.</li> <li>3. Replace the panel.</li> </ol>
The panel appears to activate talk paths, but other panels can't hear the panel operator.	<ol style="list-style-type: none"> <li>1. Correct microphone may not be selected or on.</li> <li>2. The panel may have been defined as a nearby panel in the Eclipse Configuration System.</li> <li>3. The panel does not have eavesdropping enabled.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check MIC and HS XFR keys to ensure the intended microphone is selected and on.</li> <li>2. Check Eclipse Configuration System to make sure the panel has not been defined as a nearby panel.</li> <li>3. Check Eclipse Configuration System to make sure eavesdropping is enabled.</li> <li>4. Test the integrity of the panel's audio path by temporarily setting a forced listen to it.</li> <li>5. Reset the panel.</li> <li>6. Replace the panel.</li> </ol>

SYMPTOM	CAUSE	SOLUTION
The panel is inoperative and all red keys flash slowly.	<p>1. The matrix frame has just been powered up and is still downloading the configuration to the matrix cards.</p> <p>2. Cable is disconnected.</p> <p>3. Data paths are corrupted.</p> <p>4. Panel has not been assigned correct port type.</p> <p>5. Matrix card type does not match panel. Panels with COM-10 Communications Modules should have MTX-A8 or MVX-A8. Panels with COM-20 Communications Modules should have MTX-D8 or MVX-D8.</p>	<p>1. Wait 60 seconds.</p> <p>2. Make sure the cable to panel and matrix is plugged in at both ends.</p> <p>3. Check the integrity of the data paths, especially the polarity for panels using a COM-10 Communications Module.</p> <p>4. Check Eclipse Configuration System to make sure the panel has been assigned the correct port type.</p> <p>5. Confirm that the matrix card type matches the panel.</p> <p>6. Reset the panel's matrix card in the matrix frame.</p> <p>7. Reset the panel.</p> <p>8. Replace the panel.</p>
No audio from the panel's speaker.	<p>1. Volume knob (labeled VOL) on keypad module is turned down.</p> <p>2. Speaker key (labeled SPKR) is off.</p> <p>3. Audio cannot be heard in a headphone.</p> <p>4. Speaker may have been disabled in Eclipse Configuration System.</p>	<p>1. Turn VOL knob up.</p> <p>2. Make sure SPKR key is on.</p> <p>3. Check whether audio can be heard in a headphone.</p> <p>4. Check Eclipse Configuration System and the panel's logic inputs to make sure the speaker has not been disabled in the software.</p> <p>5. Test the integrity of the panel's audio path by temporarily setting a forced listen to it.</p> <p>6. Reset the panel's matrix card in the matrix frame.</p> <p>7. Replace the panel's matrix card in the matrix frame.</p> <p>8. Reset the panel.</p> <p>9. Replace the panel.</p>
The operator cannot hear another panel's page or call signal tones.	<p>1. Page volume control needs adjusting in Eclipse Configuration System.</p> <p>2. Page override is enabled in Eclipse Configuration System.</p>	<p>1. Adjust the panel's page volume control using Eclipse Configuration System (refer to the <i>Eclipse Configuration System Manual</i> for more information.)</p> <p>3. Check the Eclipse Configuration System to make sure page override is not enabled for the panel.</p> <p>4. Reset the panel.</p> <p>5. Replace the panel.</p>
Announce tones (eavesdropping indication, change tones, and so on) are not heard at the panel.	Monitoring tones and change tones are not enabled in Eclipse Configuration System.	Check Eclipse Configuration System to make sure monitoring tones and change tones are enabled.

<b>SYMPTOM</b>	<b>CAUSE</b>	<b>SOLUTION</b>
No speaker audio from the external program feed.	1. Program volume knob (labeled VOL/PROG) is not turned up. 2. Program source is not producing audio.	1. Turn up VOL/PROG knob. 2. Check program source. 3. Reset the panel. 4. Replace the panel.
The headphone is not receiving audio from the external program feed.	1. Program may have been disabled for the second program feed in Eclipse Configuration System.	1. If the external program feed is audible in the speaker, check Eclipse Configuration System to make sure the program was not disabled for the second earphone feed. 2. Replace the panel.

# ANALOG BLOCK DIAGRAM

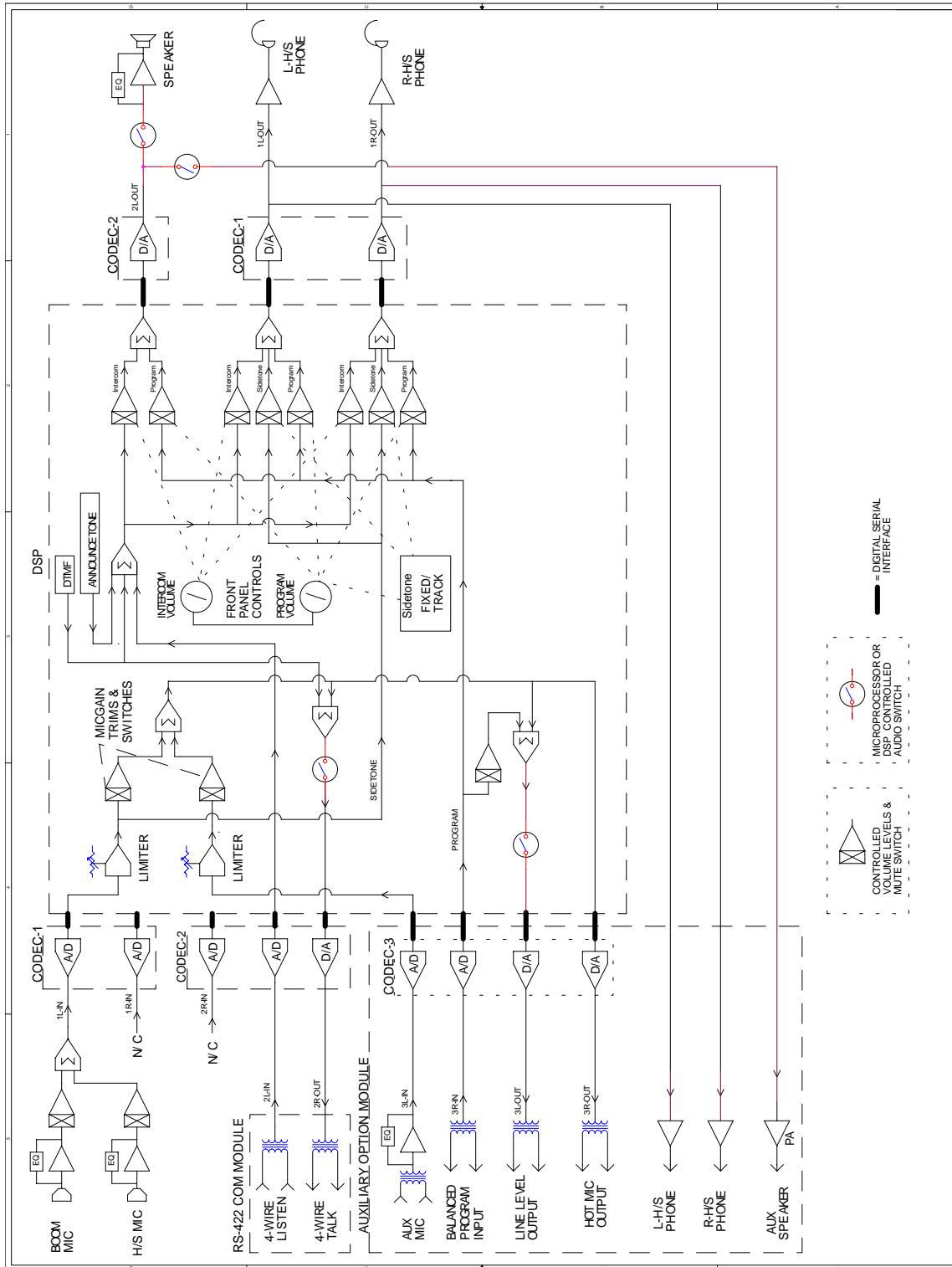


Figure 7-1: Analog Block Diagram

## PANEL BLOCK DIAGRAM

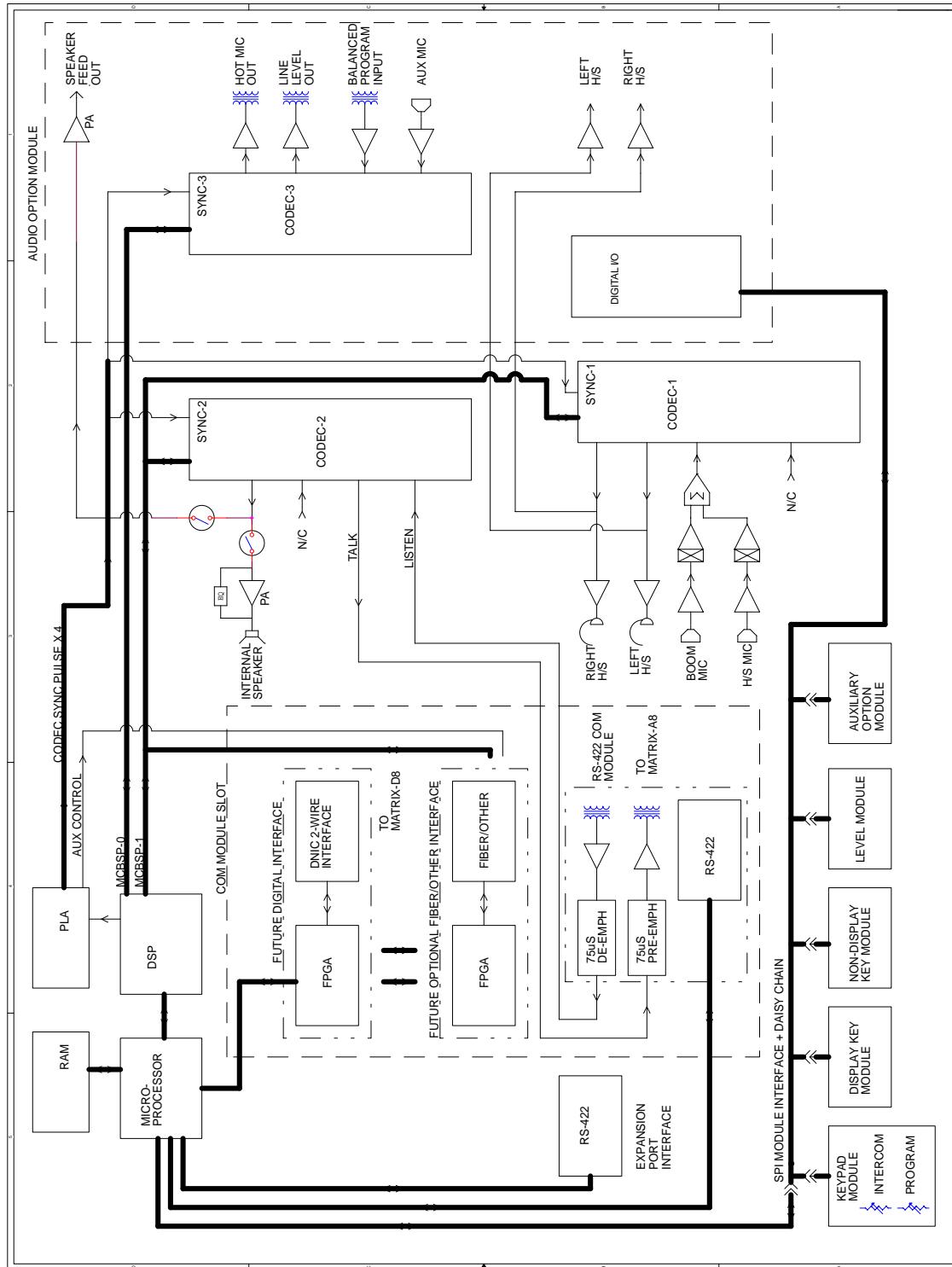


Figure 7-2: Panel Block Diagram

# 8 SPECIFICATIONS

0 dBu is referenced to 0.775 volts RMS

## BASIC PANEL

### Front-Panel Controls and Connectors

Talk/Listen Buttons	6 (1 key module)
	14 (2 key modules)
	22 (3 key modules)
	30 (4 key modules)
Function Buttons	4
Telephone Keypad Buttons (optional)	12
Answer Back Button	1
Clear Button	1
Volume Controls	Main, Vol/Prog
Headset Connector	XLR-4M only
Panel Mic Connector	Locking 1/4-in. phone jack

### Rear-Panel Connectors

To Matrix	DB-15 (for 2-wire interfaces)
	RJ-45 (for 4-wire interfaces)
Expansion Option	RJ-45

### Panel Microphone Input

Type	Electret with proprietary phone jack
Input Level	- 40 dBu
Gain Adjustment Range	0 to 20 dB
Impedance	200 Ohms

### Headset Microphone Input

Type	Dynamic
Input Level	- 55 dBu
Gain Adjustment Range	0 to 20 dB
Impedance	200 Ohms

### Line Input/Output

Type	Transformer Balanced
Input Impedance	8k Ohms Bridging
Output Impedance	150 Ohms
Level	0 dBu nominal
Frequency Response	50 Hz to 15 kHz, ± 2 dB

### Headphone Outputs

Impedance	50 to 600 Ohms
Power	1/2 W into 50 Ohms

<b>Temperature</b>	
Operating	0° to 50° C (32° to 125° F)
Humidity	20% to 90%, noncondensing
 <b>Power</b>	
In-Line Power Supply, with 3-pin EIA connector, UL approved power supply	
Voltage	90 to 245 VAC, 50 to 60 Hz, 40 VA max.
 <b>Dimensions</b>	
Height	1.75 in. (45 mm)
Width	17 3/8 in. (436 mm)
Depth	8.25 in. (210 mm)
 <b>Weight</b>	
7.5 lbs.	
 <b>EXPANSION PANEL</b>	
<b>Front-Panel Controls and Connectors</b>	
Talk/Listen Buttons	30 (4 key modules)
 <b>Rear-Panel Connectors</b>	
Expansion Option	RJ-45
 <b>Auxiliary Options Module</b>	
<b>Balanced Program Input</b>	
Type	Transformer Balanced
Input Impedance	8K Ohms Bridging
Frequency Response	50 Hz to 15 KHz, ± 2 dB
Connector	3-pin XLR female
 <b>Auxiliary Microphone Input</b>	
Type	Dynamic
Input Level	-40 dBu
Gain Adjustment Range	±5 dB (software)
Impedance	200 Ohms
Connector	3-pin XLR female
 <b>Line Level Output</b>	
Type	Transformer Balanced
Output Impedance	600 Ohms
Level	0 dBu nominal
Frequency Response	50 Hz to 15 kHz, ± 2 dB
Connector	mini-phone

<b>Hot Microphone Output</b>	
Type	Transformer Balanced
Output Impedance	600 Ohms
Level	0 dBu nominal
Frequency Response	50 Hz to 15 kHz, ± 2 dB
Connector	3-pin XLR male
<b>Speaker Feed Output</b>	
Impedance	4 to 8 Ohms
Power	1/2 watt at 4 Ohms
Connector	mini-phone
<b>Relay Output</b>	
Two relay outputs	
SPDT	
Contact Rating	30 VDC at 1 ampere
Connector	DB-25 female
<b>GPI Input</b>	
Two GPI inputs	
Connector	DB-25 female



# 9 GLOSSARY

**Analog Port** Any of the Eclipse matrix's analog input/output RJ-45 connectors that are used to connect cable from the matrix to panels and interfaces. Each "port" connects to a separate audio channel in the matrix intercom system.

**Bus** A bus is the channel or path between the components in the matrix along which electrical signals flow to carry information from one component to the next. In the Eclipse matrix the bus is located in the etched surface of the midplane.

**Call Signal** A call signal is an electronic signal sent from one panel or interface to another. A call signal can be audible and/or visual. Typically a call signal is sent to get the attention of a panel operator who may have turned down their intercom speaker's volume or removed their headset. It can also be sent to activate an electronic relay.

**Category-5 cable** EIA/TIA 568 category specification relating to network cabling. Shielded category-5 cabling is required for Eclipse matrix wiring.

**CellCom** Digital wireless communications product. Sold under the CellCom name in USA and as FreeSpeak in Europe and Asia.

**Central Matrix** The term "central matrix" is used to differentiate the central hardware and software of the intercom system from the connected audio devices. The central matrix consists of:

1. The metal housing for the circuit cards and power supplies.
2. The circuit cards.
3. The power supplies.
4. The rear panel connectors which connect the matrix's hardware to panels and interfaces.

**Destination** A device such as an intercom panel, beltpack, or interface to which audio signals are sent. The device from which audio signals are sent is called a "source".

**Duplex** All real-time communication between individuals talking face to face is full duplex, meaning that they can both talk and listen simultaneously. The Eclipse Omega matrix provides full-duplex audio.

**ECS** Eclipse Configuration System. Software program that guides the operation of the central matrix circuit cards and connected panels.

**EMS** Element Management System. Software program that is used to manage the Concert server system resources.

**Ethernet** International standard which describes how information is transmitted across a network. Provides for the efficient organization of network components.

**Fiber-optic Cable** A fiber-optic cable consists of a glass core covered with a reflective material called “cladding” and several layers of buffer coating to protect the cable from the environment. A laser sends light pulses through the glass core to the other end of the cable.

**FreeSpeak** Digital wireless communications product. Sold under the FreeSpeak name in Europe and Asia and CellCom in USA.

**Full Duplex** Refers to transmission of signals in two directions simultaneously.

**IFB** “Interruptible Foldback”. The term “foldback” refers to sending “program” audio, or some other audio mix, back to announcers while they are on the air. Doing so allows announcers to monitor themselves, other announcers, videotapes of commercials, or some mix of sources, while they are on the air. This is typically found in television news and live broadcast events.

Announcers typically wear a small ear piece so they can hear the selected foldback audio mix. When a director wants to give directions to an announcer on air, or to announce changes in the program, the director must “interrupt” the foldback. To do this, the director uses a channel specifically set up to interrupt the foldback audio.

**Interface Module** A piece of electronic hardware designed to convert the 4-wire signals of a central matrix port to some other form of communication, such as 2-wire party line, telephone, etc. The interface module is connected to a central matrix port. The external non-4-wire device is then connected to the interface module.

**ISO** The ISO function, short for “panel ISOlation”, allows a panel operator to call a destination and interrupt all of that destination’s other audio paths and establish a private conversation. When the call is completed the destination’s audio pathways are restored to their original state before the interruption.

**IV-R** Instant Voice Router. Software that routes digital audio data between Concert users and between Concert users and Eclipse systems.

**Label** A label is an alphanumeric name of up to five characters that identifies a source, destination, or control function accessed by an intercom panel. Labels appear in the displays of the intercom panel. Labels can identify panels, ports interfaced to other external equipment, fixed groups, party lines, and special control functions.

**Mode** A term used to describe a light path through a fiber as in multimode or single mode.

**Multimode Fiber-optic Cable** The glass core of a multimode fiber is larger than the core of a single mode fiber, which causes the transmitted light beam to disperse as it travels through the core. Single mode fiber, with its smaller core, concentrates the light beam so that it carries signals further. Multimode fiber was the first type of fiber offered

by manufacturers. Single-mode fiber evolved as production methods improved.

**Multiplexing** The process by which two or more signals are transmitted over a single communications channel. Examples include time division and wavelength division multiplexing.

**Nanometer (nm)** Common unit of measure for wavelength. One billionth of a meter.

**Non-volatile Memory** Data stored in the CPU's firmware (ROM) that is not lost when the power is turned off.

**Optical Signal** A laser at one end of a fiber-optic cable pulses on or off to send a light signal through the glass core of the cable to the other end of the cable. Because the light signals are binary (on or off), the signal is digital.

**Panel** Also referred to as "station" in some cases (usually older manuals). Any intelligent intercom device connected to the rear-panel analog ports of the central matrix. This term does not refer to devices connected through interface modules.

**Port** Any of the input/output connections (RJ-45 connectors) on the back panel of the central matrix. These connectors and the attached cables connect the central matrix to remote intercom devices. The term "port" emphasizes that the connection is a "portal" between the central matrix and the remote intercom devices.

**Program** Any separate audio source that is fed into the intercom channels. In television applications, for example, "program" audio is the audio that is broadcast on air.

**Rack Unit or RU** Standardized unit of mounting space on a rack panel. Each rack unit is 1.75 inches (44.45 mm) of vertical mounting space. Therefore 1 RU is 1.75 inches (44.45 mm) of vertical mounting space, 2 RU is 3.5 inches (88.9 mm), 3 RU is 5.25 inches (133.35 mm), and so on.

**Remote Panel** Any intelligent intercom device connected to the back-panel ports of the central matrix. This term does not refer to devices connected through interfaces.

**Sidetone** The sound of the panel operator's own voice heard in their own earphone as they speak.

**Single-mode Fiber-optic Cable** The glass core of a single-mode fiber is smaller in diameter than the core of a multimode fiber, so that the light signal transmitted over the core is more concentrated than with multimode fiber, which allows the signal to travel further. Single-mode fiber evolved from multimode fiber as production methods improved.

**Source** In this manual, the term "source" refers to a device—such as an intercom panel, interface, or beltpack—that sends audio into the matrix. The device to which audio is sent is called a "destination".

**VOX** In the Eclipse system, when audio at a panel exceeds a threshold, a light switches on at the panel's port card to visually cue the operator. The threshold level is set in the Eclipse Configuration Software.

**V-Series** Communications panels used with Eclipse systems providing advanced facilities. Available in rack mount and desktop formats.

**Wavelength-division Multiplexing (WDM)** A method of multiplexing optical signals developed for use on fiber-optic cable. Each signal is assigned a particular wavelength on the light spectrum and therefore many signals can be transmitted simultaneously without interfering with each other.

# ECLIPSE MANUALS

The following manuals are available covering Eclipse products and accessories.

## SOFTWARE MANUALS

- Eclipse Configuration System (ECS) Instruction Manual - 810299Z
- Eclipse Logic Maestro Instruction Manual - 810414Z
- Eclipse Production Maestro Quick Start Guide - 810409Z
- Eclipse Production Maestro Installation and User Guide - 810410Z
- Eclipse DECTSync Manual - 810412Z
- Eclipse Host Computer Interface (HCI) Manual - 810413Z

## HARDWARE MANUALS

- Eclipse Omega Matrix Instruction Manual - 810290Z
- Eclipse Median Matrix Instruction Manual - 810347Z
- Eclipse PiCo Matrix Instruction Manual - 810348Z
- Eclipse-32 Matrix Instruction Manual - 810315Z
- Eclipse Matrix Installation Manual - 810298Z
- Eclipse Upgrade Reference Manual - 810377Z
- Eclipse V-Series Panels User Manual - 810365Z
- Eclipse FOR-22 4-Wire Interface Instruction Manual - 810306Z
- Eclipse CCI-22 Party Line Interface Instruction Manual - 810307Z
- Eclipse TEL-14 Telephone Interface Instruction Manual - 810308Z
- Eclipse GPI-6 General Purpose Inputs Instruction Manual - 810309Z
- Eclipse RLY-6 General Purpose Outputs Instruction Manual - 810310Z
- DIG-2 Digital Interface Instruction Manual - 810311Z
- IMF-3, IMF-102, DIF-102 Interface Module Frame Instruction Manual - 810313Z
- Eclipse AES-6 Digital Interface Instruction Manual - 810383Z
- Eclipse BAL-8 Isolation Interface Instruction Manual - 810403Z
- Eclipse V-Series AES-3 Option Card Installation Instructions - 810388Z
- Eclipse V-Series XLR-7M Upgrade Instructions - 810405Z
- Eclipse V-Series T-Adapter Installation Instructions - 810406Z
- Eclipse FIM-202D Fiber Interface Instruction Manual - 810385Z

Eclipse FIM-102 Fiber Interface Instruction Manual - 810319Z  
Eclipse FIM-108 Fiber Interface Instruction Manual - 810291Z  
Eclipse 4000 Series II Panels Installation Guide - STA0530Z  
Eclipse 4000 Series II Panels User Guide - STA0531Z  
Eclipse ICS 1008E/1016E Panels Instruction Manual - 810404Z  
Eclipse ICS 102/62 Panels Instruction Manual - 810302Z  
Eclipse ICS 2003 Panel Instruction Manual 810303Z  
Eclipse ICS 92/52 Panels Instruction Manual - 810301Z  
Eclipse i-Station Instruction Manual - 810305Z  
Eclipse ICS-21 Speaker Panel Instruction Manual - 810263Z  
Eclipse ICS-22 Speaker Panel Instruction Manual - 810264Z  
Eclipse ICS-24 Headset Panel Instruction Manual - 810265Z  
Eclipse Digital Wireless Beltpack Instruction Manual - 810376Z

## LIMITED WARRANTY

This document details the Clear-Com Standard Limited Warranty for all new products for sale within all regions with the exception of Military, Aerospace, and Government (MAG).

**EXCEPT AS SET FORTH HEREIN ("LIMITED WARRANTY"), CLEAR-COM MAKES NO OTHER WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, NONINFRINGEMENT OF THIRD PARTY RIGHTS, OR FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE EXPRESSLY DISCLAIMED.**

1. **Standard Limited Warranty.** Clear-Com Communication Systems ("Clear-Com") warrants its products, including supplied accessories, against defects in material or workmanship for the time periods as set forth below provided it was purchased from an authorized Clear-Com dealer or distributor.

a) Pursuant to this Limited Warranty, Clear-Com will, at its option:

- i) repair the product using new or refurbished parts, or;
- ii) replace the product with a new or refurbished product.

b) Remedies: In the event of a defect, the rights detailed in 1 (a) are your exclusive remedies. For purposes of this Limited Warranty, "refurbished" means a product or part that has been returned to its original specifications.

c) Standard Warranty Period (by Product):

- i) All Clear-Com brand systems and products, including belt packs, have a Limited Warranty of two years, with the exception of:
  - (1) Cables, accessories, components & consumable items have a Limited Warranty of 90 days.
  - (2) Any Clear-Com product that has been classified as obsolete at the time of sale has a Limited Warranty of 90 days from sales and will be replaced with the same product or a sales credit will be issued, at the sole discretion of Clear-Com.
  - (3) Headsets, handsets, microphones, and associated spare parts, as well as UHF wireless IFB products, have a Limited Warranty of one year.
  - (4) UHF WBS Analog wireless intercom systems have a Limited Warranty of three years.

- (5) All software products, including Concert (Client and Server), ECS, Production Maestro and Logic Maestro are warranted for one year and shall substantially conform to published specifications. The media on which the Software is furnished is warranted to be free of defects in material and workmanship (under normal use) for a period of one year.
  - (6) Any Clear-Com products that are listed within the last time buy period have the same Limited Warranty for their type 1.i.1 - 1.i.5 as above.
- d) Any Clear-Com product that is repaired or supplied as a replacement under the terms of this Limited Warranty shall inherit the remaining warranty period from the original product.
- e) Standard Warranty Period Start Date
- i) Dealer / Distributor Sales: In view of Dealer or Distributor stocking practices, the Standard Warranty Period for products sold through Dealers or Distributors will commence from the Clear-Com invoice date and will include an automatic extension of three months. Any valid warranty claim within the Standard Warranty Period as determined by the Clear-Com invoice date will be covered without further supporting evidence. All warranty claims after this date must be supported by the Customer's proof of purchase that demonstrates the product is still within the Standard Warranty Period (as detailed in Section 1.c.i above, plus the automatic three month extension) from their purchase date.
  - ii) Direct Sales: The Standard Warranty Period will commence from the date the product was shipped from Clear-Com to the Customer. The Standard Warranty Period start date for contracts that include commissioning will be the date of the Site Acceptance Test (SAT) or one month from conclusion of the commissioning project, whichever is earlier.
- f) Invalidation of Warranty
- i) This Limited Warranty shall be invalidated if the product's outer case has been opened and internal modifications have been made or damage has occurred, or upon the occurrence of other damage or failure not attributable to normal wear and tear. Authorized modifications with Clear-Com's express written permission will not invalidate the warranty.
- g) Software Updates
- i) Software Updates are released periodically to correct discovered program bugs. During the Warranty Period, software updates are available to Customers free of charge.

h) Software Upgrades

- i) Software Upgrades include new Features and/or Functional Enhancements and are not included as part of the Standard Warranty but may be purchased at the published rates.
- ii) Note: In the absence of a Software Update containing a program correction and no available workaround to mitigate the problem, at the discretion of Service, Sales, Engineering, or Product Management, the Customer may be provided a Software Upgrade under warranty.

2. **Exclusions.** Services do not cover damage or failure caused by any occurrence beyond Clear-Com's reasonable control, including without limitation acts of God, fire, flooding, earthquake, lightning, failure of electric power or air conditioning, neglect, misuse, improper operation, war, government regulations, supply shortages, riots, sabotage, terrorism, unauthorized modifications or repair, strikes, labor disputes or any product failure that Clear-Com determines is not a result of failure in the Services provided by Clear-Com. Further Services excluded from this Agreement include: services required due to errors or omissions in Customer purchase orders; installation or maintenance of wiring, circuits, electrical conduits or devices external to the products; replacement or reconditioning of products which, in Clear-Com's opinion cannot be reliably maintained or properly serviced due to excessive wear or deterioration; Customer's failure to maintain the installation site in accordance with the environmental specifications of the products; or service on products removed from the location originally specified by Customer and/or reinstalled without the prior written approval of Clear-Com. Customer will pay Clear-Com's then current published charges to restore such Covered Products to a condition eligible for further service under this Agreement. Clear-Com shall be excused from and shall not be liable for any failure or delay in performance under this Agreement due to the foregoing or any causes beyond its reasonable control.

3. **Limitation of Liability.** IN NO EVENT WILL CLEAR-COM BE LIABLE UNDER THIS AGREEMENT FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS), REGARDLESS OF THE FORM OF ACTION, EVEN IF ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES.

4. **Assignment.** Neither party may assign this Agreement or any portion thereof without the prior written consent of the other, except in the event of a merger, sale of all or substantially all of the assets or other corporate reorganization.

5. **Ownership of replaced parts or product.** All replaced parts or products become the property of Clear-Com.

6. **Entire Agreement.** This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof, and supersedes all prior or contemporaneous proposals, oral or written, and all other communications between them relating to the subject matter of this Agreement.



# TECHNICAL SUPPORT & REPAIR POLICY

## NOVEMBER 1, 2008

In order to ensure that your experience with Clear-Com and our World Class products is as beneficial, effective and efficient as possible, we would like to define the policies and share some "best practices" that can accelerate any problem solving processes which we may find necessary and to enhance your customer service experience. Our Technical Support, Return Material Authorization, and Repair Policies are set forth below. These Policies are subject to revision and constantly evolve in order to address our Customers' and the Market's needs. Accordingly these are provided by way of guidance and for information only and may be changed at anytime with or without Notice.

### TECHNICAL SUPPORT POLICY

- a) Telephone, online, and e-mail technical support will be provided by the Customer Service Center free of charge during the Warranty Period.
- b) Technical support will be provided free of charge for all software products under the following conditions:
  - i) The application, operating, and embedded software is installed on a product covered by Clear-Com's Limited Warranty, and:
    - (1) The software is at the current release level; or,
    - (2) The software is one (1) version removed from current.
  - ii) Older versions of software will receive "best-effort" support, but will not be updated to correct reported bugs or add requested functionality.
- c) For Technical Support:
  - i) North and South America, (inc. Canada, Mexico, and the Caribbean) & US Military:

Hours:	0800 - 1700 Pacific Time
Days:	Monday - Friday
Tel:	+1 510 337 6600
Email:	<a href="mailto:CustomerServicesUS@vitecgroup.com">CustomerServicesUS@vitecgroup.com</a>
  - ii) Europe, the Middle East and Africa:

Hours:	0800 - midnight Central European Time
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Days: Monday - Friday  
Tel: +49 40 853 999 700  
Email: [TechnicalSupportEMEA@vitecgroup.com](mailto:TechnicalSupportEMEA@vitecgroup.com)

iii) Asia-Pacific:

Hours: 0800 - 1700 Pacific Time  
Days: Monday - Friday  
Tel: +1 510 337 6600  
Email: [CustomerServicesAPAC@vitecgroup.com](mailto:CustomerServicesAPAC@vitecgroup.com)

- d) Email Technical Support is available for all Clear-Com branded products free of charge for the life of the product, or two years after a product has been classified as obsolete, whichever comes first.

e) Support for Distributor and Dealer Sales

- i) Distributors and Dealers may utilize the Customer Service Centers once a system has been installed and commissioned. Clear-Com Systems and Applications Engineers will provide support to the Distributor from the pre-sales stage through to satisfactory installation for new system purchases. Customers will be encouraged to contact their Dealer or Distributor with their installation and technical support enquires rather than using the Customer Service Centers directly.

f) Support for Direct Sales

- i) Customers may utilize the Customer Service Centers once a system has been installed and commissioned by Clear-Com Systems and Applications Engineers, or in the case of project installations, once the Project Team has completed the hand-over to the Support Centers.

## **RETURN MATERIAL AUTHORIZATION POLICY**

- a) Authorizations: All products returned to Clear-Com or a Clear-Com Authorized Service Partner must be identified by a Return Material Authorization (RMA) number.
- b) The Customer will be provided with an RMA number upon contacting Clear-Com Sales Support as instructed below.
- c) The RMA number must be obtained from Clear-Com via phone or email prior to returning product to the Service Center. Product received by the Service Center without a proper RMA number is subject to return to the Customer at the Customer's expense.

- d) Damaged equipment will be repaired at the Customer's expense.
- e) Returns are subject to a 15% restocking fee.
- f) Advance Warranty Replacements (AWRs):
  - i) *During the first 30 days of the Standard Warranty Period:* Once the equipment fault has been verified by Clear-Com or its authorized representative, Clear-Com will ship a new replacement product. The Customer will be provided with an RMA number and be required to return the faulty equipment within 14 days of receipt of the replacement or will be invoiced for the list price of a new product.
  - ii) *During days 31-90 of the Standard Warranty Period:* Once the equipment fault has been verified by Clear-Com or its authorized representative, Clear-Com will ship a like-new, fully refurbished replacement product. The Customer will be provided with an RMA number and be required to return the faulty equipment within 14 days of receipt of the replacement or will be invoiced for the list price of a new product.
  - iii) To obtain an RMA number or request an AWR:
    - (1) North and South America, Asia-Pacific, and US Military:

Hours:	0800 - 1700 Pacific Time
Days:	Monday - Friday
Tel:	+1 510 337 6600
Email:	<a href="mailto:SalesSupportUS@vitecgroup.com">SalesSupportUS@vitecgroup.com</a>
    - (2) Europe, the Middle East and Africa:

Hours:	0800 - 1700 GMT + 1
Days:	Monday - Friday
Tel:	+ 44 1223 815000
Email:	<a href="mailto:SalesSupportEMEA@vitecgroup.com">SalesSupportEMEA@vitecgroup.com</a>
  - iv) Note: AWRs are not available for UHF WBS Analog wireless intercom systems. UHF WBS Analog wireless intercom systems out-of-box failures must be returned to Alameda for repair.
  - v) Note: Out-of-box failures returned after 90 days will be repaired and not replaced unless approved by Clear-Com Management.
  - vi) Note: AWRs are not available after 90 days of receipt of product unless an AWR Warranty Extension is purchased at the time of product purchase.

- vii) Note: Shipping charges, including duties, taxes, and insurance (optional), to Clear-Com's factory is the responsibility of the Customer. Shipping AWRs from Clear-Com is at Clear-Com's expense (normal ground or international economy delivery). Requests for expedited shipping (E.g. "Next-Day Air") and insurance are the responsibility of the Customer.

## **REPAIR POLICY**

- a) Repair Authorizations: All products sent to Clear-Com or a Clear-Com Authorized Service Partner for repair must be identified by a Repair Authorization (RA) number (see above).
- b) The Customer will be provided with an RA number upon contacting Clear-Com Customer Services as instructed below.
- c) The RA number must be obtained from Clear-Com via phone or email prior to returning product to the Service Center. Product received by the Service Center without a proper RA number is subject to return to the Customer at the Customer's expense.
- d) Return for Repair
  - i) Customers are required to ship equipment at their own cost (including transportation, packing, transit, insurance, taxes and duties) to Clear-Com's designated location for repair.
    - (1) Clear-Com will pay for the equipment to be returned to the Customer when it is repaired under warranty.
    - (2) Shipping from Clear-Com is normal ground delivery or international economy. Requests for expedited shipping (E.g. "Next-Day Air") and insurance are the responsibility of the Customer.
  - ii) **Clear-Com does not provide temporary replacement equipment ("loaner") during the period the product is at the factory for repair.** Customers should consider a potential prolonged outage during the repair cycle, and if required for continuous operations purchase minimum spare equipment required or purchase an AWR Warranty Extension.
  - iii) No individual parts or subassemblies will be provided under warranty, and warranty repairs will be completed only by Clear-Com or its Authorized Service Partners.
  - iv) Customers requesting a non-warranty repair will be provided an estimate of the total repair cost prior to the return of the equipment. In the event that Clear-Com is unable to estimate

the cost of repair, the Customer may elect to return the product to the factory for an estimate. The Customer is responsible for shipping costs both to and from the factory in the event they choose not to accept the estimate.

- v) The Customer must provide either a purchase order for the repair work, or will be required to make an advance payment (as a debit against the Dealer's line of credit, or credit card) prior to the repaired product being returned to the Customer.
- vi) For requesting a Repair Authorization number:

(1) North and South America, Asia-Pacific, and US Military:

Hours:	0800 - 1700 Pacific Time
Days:	Monday - Friday
Tel:	+1 510 337 6600
Email:	<a href="mailto:CustomerServicesUS@vitecgroup.com">CustomerServicesUS@vitecgroup.com</a>

(2) Europe, the Middle East and Africa:

Hours:	0800 - midnight Central European Time
Days:	Monday - Friday
Tel:	+49 40 853 999 700
Email:	<a href="mailto:TechnicalSupportEMEA@vitecgroup.com">TechnicalSupportEMEA@vitecgroup.com</a>

- vii) Note: Clear-Com's Limited Warranty does not cover normal wear and tear. The Customer will be charged the full cost of the repair if their equipment has been tampered with by non-approved personnel, or has been subject to damage through electrical failure, liquid damage or mishandling. The Customer Service Center will provide the Customer with a cost estimate for any such repairs prior to undertaking the work.